AIR CONDITIONING & REFRIGERATION NEWS
The Newspaper of the Industry
Subscription Price, $6 Per Year Vol. 83, No. 6, Serial No. 1,507 February 10, 1958
Issued every Monday at 450 West Fort St., Detroit 26, Michigan
Established 1926
Member, Associated Business Publications ABP ABC Member, Audit Bureau of Circulations
Reentered as second class matter October 3, 1936, at the post office at Detroit, Mich., under the Act of March 3, 1879. Trade Mark Registered U. S. Patent Office. Copyright 1958, by Business News Publishing Co.

Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Stories of the Week
Sputniks vs. Improved Heating
Dr. Peter Schlumbohm's 'Instant Ice'
Out of Our Mailbag

Stories of the Week

"I don't have a convertible like Jerome Green," apologized the suitor. "But darling, I love you."

"And I love you, too," breathlessed Suzie. "But tell me more about Jerry."

After classroom discussion of cannibalism, Greg cracked:

"Bet the cannibal chef's cookbook would be entitled: *'Ten Best Ways To Serve Your Fellow Men.'"*

Current idea-challenges in advertising agency circles:

"Let's pull it out of the water and see if it breathes."

"Let's strangle it and see if anyone cares."

"Let's hang it on a flagpole to see if anyone salutes it."

Sputniks vs. Improved Heating

Extraordinary feature of the ASHAE conclave in Pittsburgh was an Illini Dinner—attended exclusively by University of Illinois alumni who are presently engaged in the heating and air conditioning field.

It was an astoundingly large affair—or would have seemed so, at least, to people who weren't "in on the know." Fact is, the heating industries (including both the warm-air and "hydronics" associations) have subsidized research programs at the University of Illinois for nearly 40 years.

An obvious result: Illini engineers have entered the heating business in disproportionate numbers, and now seem to dominate it.

However, U. of I. Prof. Fahnestock (who heads up the program) now is concerned about the future of this progressive flow of Illinois-trained talent into the heating industry.

Seems that Sputnik has pushed "applied science" into the background. Nowadays the emphasis is on "pure science"—and electronics, atomics, space travel, etc.

No matter how good a university program of training engineers for "applied science" (heating, air conditioning—for example) may be, it won't work without *students.*

And if all the bright young

(Continued on Page 8, Col. 1)

Store Fixture Life Set at 7½ Yrs. by SMI

CHICAGO—The average composite useful life of all supermarket fixtures and equipment is actually about 7½ years, compared to obsolete government estimates of "12 to 15 years" for retail food stores. Super Market Institute has reported to the Commissioner of Internal Revenue.

Substantiation that the actual useful life of supermarket assets is far shorter than allowed by current depreciation rates was contained in supplementary recommendations made recently by SMI for revision of Bulletin "F."

Bulletin "F" was issued in 1942 by the Internal Revenue Service as a guide for taxpayers. A government advisory board is currently considering its revision.

Taking together the current supplementary report and the recommendations made last fall (see Sept. 23, 1957 issue of NEWS, page 20), SMI now has

(Concluded on Page 41, Col. 3)

No. Calif. RACCA

OKs Steamfitters Strike Settlement

OAKLAND, Calif. — Agreement has been reached with the east bay negotiating committee of Refrigeration & Air Conditioning Contractors Association of Northern California, Herschel May, chairman, and refrigeration journeymen and apprentices of Steamfitters & Refrigeration Union, Local 342 U. A., returned to work Jan. 31.

The men went out Jan. 22 on a strike that lasted nine calendar days.

Charles L. Walling of Los Angeles, national president of RACCA, came to the bay area at the request of RACCA of Northern California, held an exploratory meeting with the union, and reported to local contractors.

The new contract provides increases for new Local 342 jour-

(Concluded on Page 41, Col. 5)

Conference Program Set for Western Show

LOS ANGELES—The Western Air Conditioning Industries Association has announced a comprehensive conference program in connection with its exhibit scheduled for May 7-11 at Shrine Exposition Hall here.

Day and evening sessions will be held. Included in the program are:

1. Symposium on school house environmental control, covering steam and hot water systems, radiant heating, ventilation, cooling, heating, central air systems, unitized room sys-

(Concluded on Page 41, Col. 1)

See Agreement Ending AFL-CIO Job Dispute

MIAMI BEACH, Fla. — An end to the long-standing jurisdictional feud that has split the AFL-CIO since its merger was seen as the result of an agreement reached here by building trades and industrial unions.

Under the agreement, craft unions will handle all new construction and industrial unions will have jurisdiction in "running" maintenance work and production.

It was also agreed that in doubtful areas between the two "clear" designations, "decisions should be made on the basis of past established practices." In difficult cases, decisions will be arbitrated.

The agreement is a revision of one worked out last June and then turned down by the

(Concluded on Page 41, Col. 4)

Detroit Cooling Sales

Complete statistics on Detroit air conditioning installations for all of 1957 on pages 34, 35, and 36 explain how a record number of 122 contractors installing an all-time high of 60 makes put in a second-high 1,971 jobs in 1,270 different establishments during the year.

Shawhan Named Bryant President

SYRACUSE, N. Y. — Samuel F. Shawhan has been elected president of Bryant Mfg. Co., Indianapolis, a division of Carrier Corp., it was announced by Lyle C. Harvey, senior vice president of Carrier.

Shawhan

Shawhan will succeed Ronald N. Campbell who has resigned.

Associated with Carrier

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BEHIND PAGE ONE . . .

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Fedders Midget Portable Has 'Safety Mount'

MASPETH, N. Y.—A lightweight, midget size portable air conditioner with a new mounting principle has been introduced by Fedders-Quigan Corp.

The "Safety-Fast" mounting system, which "does away with complicated and costly installation kits," makes it possible to completely install a unit within just a few minutes of bringing it into the house, according to the company. A patent has been applied for the device.

The new air conditioner, called the "Minute Mount," model 86-M2, was unveiled at the factory here by Salvatore Giordano, Fedders president. He predicted that it would

(Concluded on Back Page, Col. 3)

Kelvinator Seeks 'Neglected Areas' In Product Market

DETROIT, Feb. 5 — Stating that "we are convinced that neglected areas of consumer demand exist in the appliance market, and we have been searching for opportunities along the lines of our unique Rambler position in the automobile market," George Romney, president, American Motors Corp., told stockholders at the corporation's annual meeting that "we are currently exploring promising possibilities of this general character.

Romney did not discuss these "possibilities" of expansion of the Kelvinator Div.'s line of products in any more detail, nor did B. A. Chapman, executive

(Concluded on Back Page, Col. 1)

Changes Cut 2 G-E Room Unit Sizes by 20%

Says 'Spine-Fin' Coils Add 50% In Efficiency

NEW YORK CITY — Engineering advances that cut its "Thinline" room air conditioner size by 20% while at the same time increasing efficiency have been incorporated in two of four 1958 models introduced here recently by the General Electric Co.

Called the "Custom Thinline," the two units are equipped with spine-fin cooling coils, which G-E claims are 50% more efficient than plate-type coils, and a rotary compressor that occupies only one-third as much cubic space as the comparable reciprocating compressor in previous models. (See picture, page 31).

Other 1958 models introduced were a do-it-yourself "Thinette" that can be installed by a handy man in half an hour with saw and screw driver and a "Deluxe Thinline," a 1½-hp., 230-volt model with a cooling capacity of 14,500 B.t.u.h.

(Concluded on Page 4, Col. 1)

Janitrol Unit's Heat Exchanger 'Won't Burn Out'

COLUMBUS, Ohio — A new year-round air conditioner featuring a heat exchanger that won't burn out, and a gas-fired vertical winter air conditioner have been announced by Janitrol Heating & Air Conditioning Div., Surface Combustion Corp.

Completely restyled and redesigned lines have trim, rectangular cabinets color-styled in two-tone colors, Janitrol said. Phoenix beige and mocha brown are new colors to complement wood tones. A wide, gold-textured center panel highlights the "Win-Sum-Matic" year-round air conditioner.

Many engineering improvements were made in this unit to provide greater economy, easier maintenance, and quieter operation, the company explained. Win-Sum-Matic occupies as little as 4½ sq. ft. of floor space, is available in six sizes from 80,000 to 200,000 B.t.u.h.

(Continued on Page 12, Col. 1)

YOU Asked About It

A NEW SERVICE to our readers begins in this issue. On page 14 you'll find "You Asked About It," a column in which industry experts answer questions on field problems asked by readers. Meat discoloration is the subject of the first query in this series. Another NEWS feature, Frank J. Versagi's column, appears on page 38 under the new heading, "Technical Center."

Regions 7, 8, 12

Joint ARW Meeting In Galveston To Hear About 3 Refrigerant Producers' Policies on Distribution

GALVESTON, Texas — Region 8, Air-Conditioning & Refrigeration Wholesalers plans a joint meeting with Regions 7 and 12, which includes a special ladies program, in the Buccaneer hotel here Feb. 14-15.

A welcoming gift will be given to ladies who register (fee $1) and coffee will be served Friday morning, Feb. 14, from 9 to 11 while Region 8 men gather in a business session.

Open meeting with Regions 7 and 12 will be held by Region 8 group from 11 to noon when Houston, Texas wholesalers will be host to all for lunch. Friday afternoon is open for men to do as they wish. A bus tour of Galveston has been arranged for the women from 1:30 to 3:30 p.m.

Saturday morning, Feb. 15, from 9:30 to 10 is set aside for Joint Regions 7, 8, and 12 ARW meeting to view a film entitled "Story of Creative Capital." From 10 to 10:30 Joe Hoopes will discuss E. I. du Pont de Nemours & Co., Inc.'s policy and distribution of "Freon."

Then from 10:30 to 11, H. L. Robbins, sales manager, General Chemicals Div., Allied Chemical & Dye Corp., will explain the distribution policy for "Genetron."

Arnold Blitz of Pennsalt Chemicals Corp. will outline the distribution policy for "Isotron" from 11 to 11:30 that morning and H. H. Robbins will discuss the "Business Outlook for '58."

Luncheon will be served at 12 noon for ARW Regions 7, 8, and 12 members, Air-Conditioning & Refrigeration Institute representatives, and wives.

Southwestern Refrigeration Service Engineers Society will hold a concurrent meeting here. It will be host at a RSES banquet that evening.

I. Phillips Jacobs, Fox and Jacobs Construction Co. of Dallas, will be after luncheon speaker at 1:15 p.m. Saturday for ARW, ARI, and RSES members. He will talk on "What the Industry Can Do to Further Use of Air Conditioning in New Low-Cost Residential Construction."

Electric Heating Symposium In Detroit Will Feature Heat Pump Talks Feb. 25

DETROIT—From 200 to 300 architects and engineers in the area served by Detroit Edison Co. are expected to attend an Electric Heating Symposium Feb. 25 in the Statler-Hilton hotel here.

To Cover Status of Electric Heating

Charles Landrigan, executive vice president of the sponsoring Detroit Edison Co., will open the program with a picture of electric heating's status in the nation today.

Edwin O. George, vice president-sales of the utility, will summarize views presented and close the program. A social hour and dinner will follow.

Scheduled for the hotel's Wayne room, registration will open at 8:30 a.m. before L. E. Tayler, general chairman and Detroit Edison's commercial sales director, welcomes visitors at 9. Landrigan then speaks at 9:05.

Fischer Black, editor and publisher of *Electrical World,* will chair the meeting beginning at 9:15 on heat pumps and insulation. "Design and Operating Aspects of Package Heat Pumps" will be discussed by Curtis Mathes, Jr., consultant to Mathes Co. at 9:30 a.m. Paul O'Neil, utility contacts manager of Weathertron Dept., General Electric Co., will cover "Future Package Heat Pumps" at 10. A general discussion will be held from 10:30 to 10:40 when there will be a break.

"Compound Heat Pumps" is the subject of R. G. Werden's talk at 10:55. He is general sales manager of engineered machinery for York Corp. G. R. Munger, design analyst, Owens-Corning Fiberglas Corp., will outline "Insulating and Moisture Control" at 11:30 a.m. to be followed by a general discussion at 12 noon and lunch from 12:30 to 1:40 p.m.

Speaks on Electric Resistance Heating

Electric resistance space heating will be the afternoon's subject. Stanley Aronson, sales manager, Berko Electric Mfg. Corp., will serve as chairman. Lowell Mast, chief engineer, Electromode Div., Commercial Controls Corp. will cover "Residence Heating" at 1:55 followed by Fred Kreiser, general sales manager, Edwin L. Wiegand Co., on "Commercial-Industrial Applications" at 2:25 p.m.

William Potter, institutional heating specialist of the Wiegand firm, will talk on "School and Institutional Heating" at 3:05. Charles W. Cole, Jr., architect, will discuss "Electric Resistance-Type Heating" at 3:45. General discussion comes at 4 p.m. and intermission at 4:10.

Alfred C. Sangster, coordinator of space heating and air conditioning for Detroit Edison, will speak in "6400 and Going!" at 4:50. Then G. M. Allen, the utility's industrial sales director, and E. J. Hurley, residential and rural sales director, will each have five minutes before a general discussion at 5 p.m.

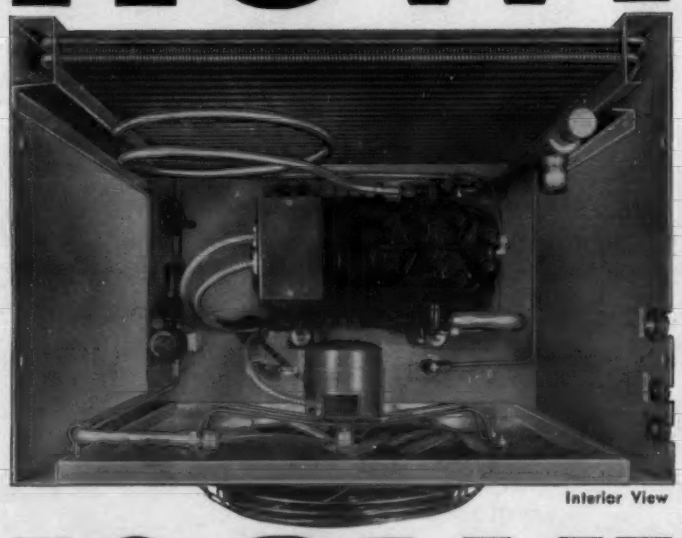
Wholesaler's 'Quiz Clinic' Scheduled In Tyler Feb. 22

DALLAS — "Quiz Clinic" of factory technicians will be focal point of Climate Supply Co.'s informal open house from 8 a.m. to 5 p.m. Feb. 22 at branch at 1301 W. Erwin in Tyler, Texas.

No speeches are promised, but Climate offers contractors and dealers the chance to ask questions and help solve their problems in informal discussions with representatives of manufacturers. "Roam from one to another and quiz all you like, they'll be there all day."

Lunch will be served from 11 a.m. to 2 p.m. and coffee served all day. Climate also will demonstrate its new self-serve wholesale system.

new!



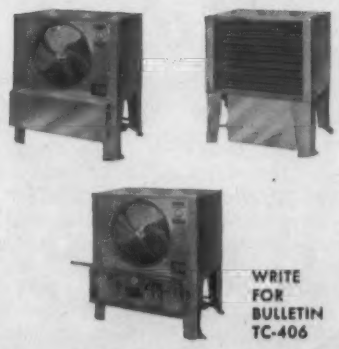
new!

KRAMER

THERMOBANK COMPRESSOR

FACTORY PACKAGED at LOW COST!

Kramer's new THERMOBANK COMPRESSOR overcomes the problems and uncertainties in field assembly of low temperature refrigeration systems. It's the only factory-assembled-and-tested automatic defrost system and includes a hermetic compressor, THERMOBANK re-evaporator and all controls. It arrives on the job ready to operate. Only simple connection to the Kramer evaporator is required and nearly all adjustments are eliminated. THERMOBANK COMPRESSOR uses an extra large air-cooled condenser and a high efficiency low temperature compressor—possible only with THERMOBANK—for maximum capacity at lowest cost. Tamper-proof aluminum case provides easy access to all components and maximum installation adaptability in any unconfined area. Units available on request for outdoor installation are designed for automatic trouble-free operation for any outside temperature.



WRITE FOR BULLETIN TC-406

KRAMER TRENTON CO. • Trenton 5, N.J.

44 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

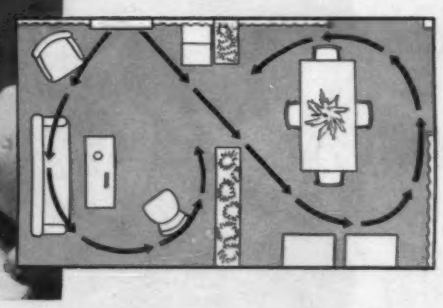
For more information about products advertised on this page use Information Center, page 30.

Mark of Styling Craftsmanship — Mark of Engineering Leadership

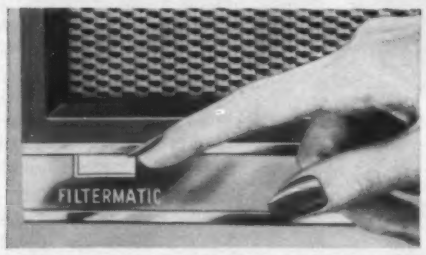
ONLY KELVINATOR GIVES YOU THESE TWO GREAT NEW ROOM AIR CONDITIONER FEATURES TO SELL!

1. Two-Directional Cooling! 2. Filtermatic Signal!

IT'S SO EASY TO DEMONSTRATE Two-Directional Cooling. Cool air can be directed left or right, up or down . . . or left and right and up and down all at once. Simply flick the control knobs that operate the two sets of vertical and two sets of horizontal louvers and your prospects can feel the difference. And when they do, you'll feel the difference in sales!



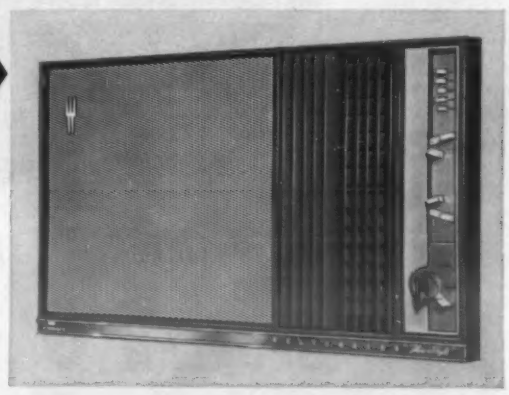
NEW 1958 1 H.P. KELVINATOR COOLS 2 ROOMS! New Kelvinator Two-Directional Cooling gives you the biggest customer-convincer in the room air conditioner business. And only Kelvinator has it! Yes, only Kelvinator lets you put the cold air where you need it when you need it. Kelvinator gives you the capacity and air flow control to channel cool, clean, refreshing air into two rooms at the same time.



NEW FILTERMATIC SIGNAL SHOWS RED when filter becomes dirty and needs replacing. As long as Kelvinator's exclusive Filtermatic Signal stays white, the filter is clean and the user is getting full cooling capacity. A sales-making demonstration!

6 ALL NEW 1958 "THIN-STYLE" MODELS—So compact—so narrow they fit into 27-inch openings . . . in the window, or through the wall. All have that sheer beauty and subtle elegance you get only with Kelvinator's new "Style Mark" design. Lovely Polar Grey and harmonious Twilight Grey are dominant colors. Entire finish is of highest quality for lasting loveliness.

Model	Current	Compressor
RH-1041	12 amp., 115 volt	1 H.P.
RH-1061	7½ amp., 115 volt	1 H.P.
RH-1081	12 amp., 115 volt	1 H.P.
RH-1082	230 volt	1 H.P.
RH-1581	12 amp., 115 volt	1½ H.P.
RH-2082	230 volt	2 H.P.



BUDGET LEADER BUILDS TRAFFIC with Kelvinator's new 1 H.P. "Challenger" model at a down-to-earth price. A big capacity, 12 amp., 115-volt unit housed in the compact "Thin-Style" cabinet. Quality features include: Adjustable thermostat, simple dial controls, adjustable air directional louvers, replaceable filter.

"MASTERPIECE" UNIT to the right has 2 H.P., big capacity for cooling large areas, small shops.

CASEMENT WINDOW UNIT also available—1 H.P., only 7½ amps., installs on any adequate 115-volt circuit.

Kelvinator OLDEST MAKER OF ELECTRIC REFRIGERATORS FOR THE HOME

DIVISION OF AMERICAN MOTORS CORP., DETROIT 32, MICHIGAN

American Motors Means More for Americans — Live Better Electrically

REFRIGERATORS • WASHERS • DRYERS • ELECTRIC RANGES • FREEZERS • ROOM AIR CONDITIONERS

For more information about products advertised on this page use Information Center, page 30.

G-E Thinline Room Air Conditioners--

(Concluded from Page 1, Col. 5)

G-E officials indicated that a reverse cycle unit, now being consumer tested, would be introduced later this year.

Paul Augenstein, general manager of the room air conditioner division, said that production of the new line would begin in volume in March. Prices will be announced later.

The new Custom Thinlines measure only 15⅝ in. high, 4¾ in. less than 1957 Custom Thinline. Width is 26 in., depth 16⅞ in.

Both models have 1-hp. compressors. One model, operating on 115 volts, has a cooling capacity of 9,000 B.t.u.h. The other, operating on 230 volts, has 10,000 B.t.u.h. capacity.

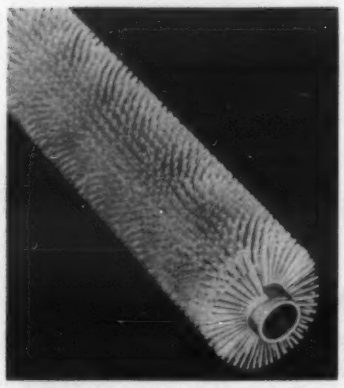
With the new spine-fin coils, the company said, air must thread its way through 770,000 aluminum spines, thus coming in contact with a far greater cold metal surface.

The new rotary compressor has fewer moving parts. It provides simultaneous compression and suction of the refrigerant through almost a full 360° cycle of operation.

Both these features are found only on General Electric room air conditioners, the company said. Four years were spent testing and developing them in G-E laboratories.

Three rotary control knobs on the front regulate a new performance selector which chooses the desired amount of cooling, moisture removal, air circulation, and quietness of operation.

Extra-low fan speed provides quiet operation and maximum dehumidification for night-time use. A group of eight individually controlled air directors provides a wide range of no-draft air circulation.



SECTION of new spine-fin cooling coil which is being used in General Electric's 1958 Custom Thinline room air conditioners.

The new Thinette is only 13 in. high and deep and 25 in. wide. Its 1-hp. compressor operating at 115 volts, 7½ amps, provides 6,000 B.t.u.h. of cooling. per ARI standard.

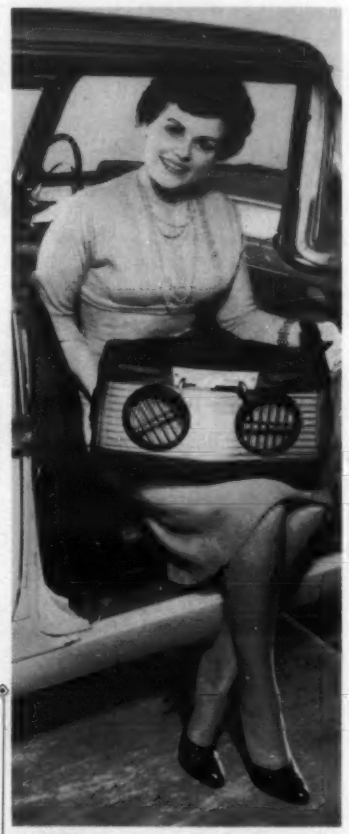
Convenience features include a "Tilt-Top" air director which operates at three positions for flexible air distribution; rotary controls for selection of desired amount of cooling, moisture removal, air circulation, and quiet; and a washable "Dynel" filter.

The Deluxe Thinline measures 20⅜ in. high, 25 in. wide, and 19½ in. deep. Control arrangement is same as on the Custom Thinline.

Cabinets on all models are of a nutria shade. Front of the Custom Thinlines is covered with a widely-spaced metallic grille, pink-gold in color, and edged with chrome. On others, grilles are off-white in color.

Commenting on the 1957 model carry-over, Augenstein predicted it would be completely sold by June 1 at price reductions of less than 20%. He saw little likelihood of widespread dumping.

He estimated the industry carry-over at 870,000 units.



JACQUELINE LAW holds 25-lb. cooling unit and fan console of Chevrolet's new auto air conditioner that mounts under the dash and is "easily transferred" from one vehicle to another. Condenser and compressor are under the hood.

Chevrolet Auto Unit Can Be Switched From Car to Car

DETROIT — Offered as a dealer-installed accessory, Chevrolet this month introduced a compact auto air conditioner that mounts under the dash and "can easily be transferred from one car to another."

Dubbed the "Cool Pack," cooling unit and fan console mounts under the dash. It measures 17 in. long and 8 in. wide. Compressor and condenser are placed under the hood.

Designed to fit all 1958 and some older model Chevrolet cars and certain light-duty trucks, the unit will sell for "about $300 plus mounting charges."

Four adjustable air outlets at front and sides of the console assure adequate distribution of cool air throughout the car or truck, the company said. Temperature is controlled automatically by a hot gas by-pass valve. An electric clutch engages the compressor only when cooling is required. The complete Cool Pack installation weighs about 104 lbs. and can be installed in approximately 3½ hours, according to Chevrolet.

This General Motors Corp. division believes the Cool Pack "should have special appeal" to fleet operators since it can be removed from one vehicle and installed in another with very little modification.

FROM ANY ANGLE···
there is no substitute for
SPORLAN 'G' VALVE
PEAK PERFORMANCE!

from Strainer to Outlet... ...from Element to Seal Cap...

SPORLAN 'G' VALVES ARE YEARS AHEAD
... in design and serviceability.

Ask your wholesaler for literature... and include Sporlan Catch-Alls, See-Alls and Solenoid Valves with your G Valve order.

Get Peak Performance Right Down the Line!

More engineering features are incorporated in them than in any other valve... yet the basic design has never changed!

SPORLAN "C" CHARGE
for Suction Temperatures Above ZERO...

SPORLAN "Z" CHARGE
for Suction Temperatures Below ZERO...

and SPORLAN "X" CHARGE
for Extremely Low Temperatures, have long since proved that

ONLY SPORLAN SELECTIVE CHARGES
can give you Peak Performance on all applications!

So... from any angle, on any refrigeration application, there is no substitute for Sporlan G Valve Peak Performance!

SPORLAN VALVE COMPANY
7525 SUSSEX AVENUE ST. LOUIS 17, MISSOURI
EXPORT DEPT. 85 BROAD STREET, NEW YORK 4, N. Y.

Trying to find the right man for a hard-to-fill vacancy—the NEWS' Classified Ads are read by your man.

Place your ad today!

For more information about products advertised on this page use Information Center, page 30.

CUBES, CRUSHED, FLAKES OR CHIPS...

which ice machine is best for your prospects?

✻ You offer each prospect just the ice he needs when you're selling Carrier's 15 ice machines—cubes, crushed, flakes or chips.

✻ Only Carrier arms you with the sales clincher of Certified Capacity; you never have to get along on vague promises of ice production "up to" so many pounds per day.

Whatever a prospect's ice needs, you can meet them when you're a Carrier dealer. You offer the most complete line on the market.

You can offer ice production in a known, guaranteed amount . . . certified in writing. And this production is established under realistic conditions of water and air, not under artificially controlled laboratory conditions.

This one-two punch closes more sales for you. You get it only from Carrier.

Call the Carrier distributor listed in your Classified Telephone Directory, or write Carrier Corporation, 310 South Geddes St., Syracuse, New York.

Carrier air conditioning · refrigeration

For more information about products advertised on this page use Information Center, page 30.

Says 'Small Grocer Is Not Washed Up'

Sees '58 as Good Year; Maintains Commercial Unit Sales One Case at a Time by Calls on Independent Store Owners

By George M. Hanning

BATTLE CREEK, Mich.—"1958 should equal the best year I've ever had, if present indications hold up," Gordon Collison, McCray commercial refrigeration distributor, declares.

'1957 ALMOST AS GOOD AS RECORD '53'

"Last year was a good year, nearly as good as 1953, which was the best," he added.

Collison does most of his business with the small independent grocers in the two-county area he covers. He sells them a case at a time. He sold only one complete market last year and has one more on the drawing board.

Collison does not feel that the small grocer in his area is washed up. The grocers, combined together in a buying group, are holding their own and are a source of profitable business to the commercial refrigeration distributor.

"When I hear other distributors talking about the declining market among independents, I wonder if I am missing the boat," he declared. "They are doing all right here."

'PIXYISH CALENDAR BLOTTERS TICKLE RIBS'

Much of his business is gained by going out and calling on the individual store owner, he said. But he keeps in touch by monthly mailings of calendar blotters featuring the rib-tickling antics of a pixyish, plump, and scantily clad girl. He uses pictures of the same girl in Christmas greetings.

"I find my customers enjoy these calendar blotters, though a refrigeration man in Kalamazoo says he wouldn't dare send them out to his trade.

"I have never received a single repercussion from them. On the other hand, one of them strayed as far as Akron, Ohio. A fellow there wrote me asking for more," he commented.

Collison, who has been in the refrigeration business for himself for 14 years here, said he got his start in the service business.

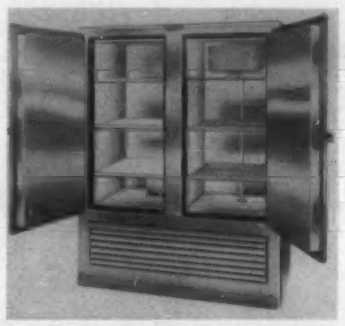
"I built my business on service and still do a sizeable service business," he declared.

Collison has four servicemen and four service trucks. He has gained a high degree of recognition and unconscious advertising by cross-hatching the blue truck cab with yellow lines. It makes the trucks instantly noticeable as they move down the street.

"They are easy to locate, too," he smiled. "When I call a customer to locate one of my trucks, all I have to do is ask her if the checkered truck is out front. If it is she can spot it in a second."

If you have been reading Collison's name as "Collision" all this time, you are not alone.

"Salesmen are always coming in here asking to see Mr. Collision," he says. "Even one of my sources presented me with a literature binder with my name printed in gold as "Collision."



McCall Adds Plate-Type Freezers, Two Temp Reach-Ins to 1958 Line

HUDSON, N. Y.—Six new plate type freezers and four new dual temperature reach-in refrigerators have been announced as additions in the 1958 line of McCall Refrigerator Corp. for the mass feeding industry.

Freezers are available in sizes from 19 to 65 cu. ft., "each featuring a wide choice of exterior and interior finishes," according to the firm. "Reach-ins are equipped with direct expansion type full flooded freezer plates. Plates are mounted in the cabinet as shelves."

OTHER FEATURES

Other features include temperature control switch, adjustable to performance desired, expansion valve of adjustable pressure limit type, pan type doors which are claimed to remain free of distortion and sag, and heavy-duty latches and hinges which maintain proper door alignment. Refrigerator can also be furnished with automatic electric defrost refrigeration system.

DIRECT-CONTACT FREEZING

Dual temperature reach-ins include four models from a combined 23 up to 47-cu. ft. capacity. Low temperature compartment is designed to serve as a 0° storage cabinet. Plate surfaces can be used for direct contact freezing, mounted as shelves with one removable, providing storage for bulky items, it was pointed out by McCall.

Normal temperature compartment is equipped with adjustable heavy-duty tinned shelves. Cabinet is refrigerated with mullion or ceiling type blower equipped with heavy-duty coils balanced to provide automatic defrost during the units' off cycle.

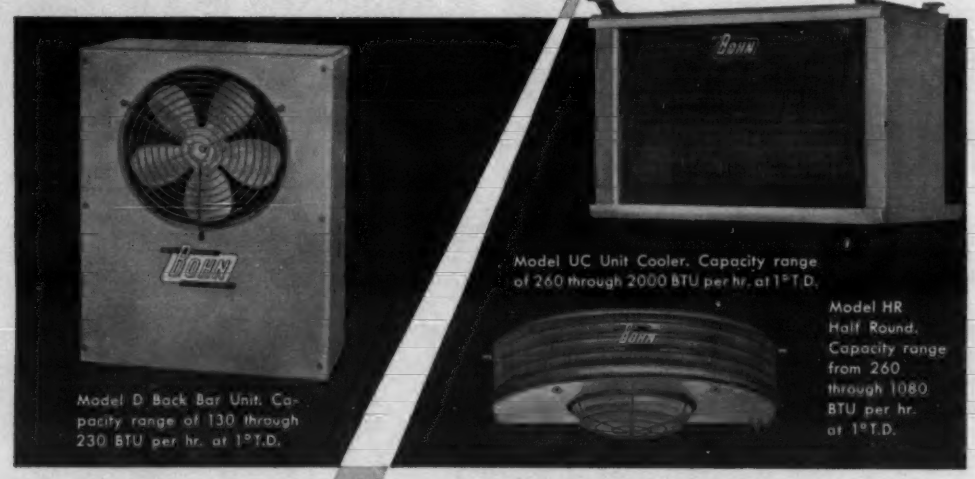
Many basic features are carried over to all reach-in models with the same deep pan type metal doors and heavy-duty latches and hinges, the company further said.

Shopping Center Exhibition Scheduled In New York Feb. 24

NEW YORK CITY—What is said to be the first trade show devoted exclusively to the shopping center industry will open here on Feb. 24 at the Hotel Statler.

The show, which will exhibit products and services used in shopping center construction and operation, will be part of a three-day convention of the International Council of Shopping Centers, according to Leonard L. Farber, president.

BOHN Products


Model UC Unit Cooler. Capacity range of 260 through 2000 BTU per hr. at 1°T.D.
Model HR Half Round. Capacity range from 260 through 1080 BTU per hr. at 1°T.D.
Model D Back Bar Unit. Capacity range of 130 through 230 BTU per hr. at 1°T.D.

for Commercial Refrigeration

rugged • lightweight • grained aluminum cabinets

• No Scratch
• No Rust
• No Paint

Better refrigeration equipment than ever before . . . at low cost . . . backed by BOHN quality and service.

Outstanding features include grained aluminum cabinets . . . rust proof fittings . . . full collar aluminum fins and copper tubing . . . reliable BOHN capacity ratings . . . life lubricated motors.

The new Model D is the ideal universal unit for all types and sizes of back bars. Model UC features built-in liquid distributor and patented air direction louvres. Model HR features a quick cleaning filter, a double drip hinged pan which prevents sweating, and air direction louvres formed in the fins.

Be sure of fine construction and economy. Write today for complete details on these and other models.

BETZ DIVISION BOHN DANVILLE, ILLINOIS

Manufacturers of Commercial Refrigeration, Industrial Air Conditioning and Special Heat Transfer Surfaces

BOHN ALUMINUM & BRASS CORPORATION • BETZ DIVISION • DANVILLE, ILLINOIS

For more information about products advertised on this page use Information Center, page 30.

14 reasons

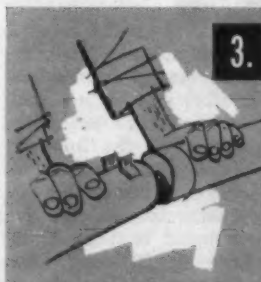
why your "best bet" is to sell

RCA Whirlpool

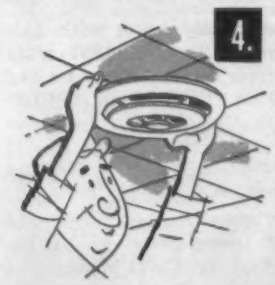
CENTRAL AIR CONDITIONERS

1. A BRAND NAME WITH CUSTOMER CONFIDENCE . . . the heavily advertised RCA WHIRLPOOL brand name . . . identified with high quality, dependability, automatic convenience, and the finest engineering.

2. INSTALLATION IN AS LITTLE AS 8 HOURS . . . with prefabricated duct work. Fast, easy, time-saving . . . entire pre-planned package can be installed in an average home by two men in approximately 8 hours.



3. PRE-INSULATED ALUMINUM DUCTS . . . merely clamp together for a fast permanent installation. They require no maintenance, are rust-resistant, and have a long, dependable life.



4. QUICK-FIT DIFFUSERS INSTALL IN MINUTES . . . one of the many reasons why RCA WHIRLPOOL central systems install so quickly. You just drill a hole, slide the assembly in, and nail straps.

5. MORE AIR OUTLETS GIVE MORE EVEN COOLING . . . no icy blasts in one spot while the corner across the room stays warm . . . the home is cooled uniformly, from room to room, from wall to wall.

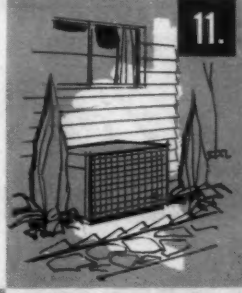
6. SMOOTHER AND FASTER AIR FLOW . . . the aluminum ducts provide fast, quiet air flow to all parts of the home . . . for more customer satisfaction.

7. LESS NOISE AND LESS VIBRATION . . . will make your customers happier. All parts are insulated to absorb sound . . . all moving parts are mounted on rubber to reduce vibration.

8. 100% AIR COOLED OPERATION . . . eliminates complex and expensive water controls, pumps, and cooling towers. Also eliminates costly water bills and maintenance.

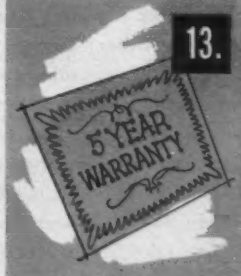
9. ONE EASY-TO-SET CONTROL . . . that users just set and forget. The unit requires no attention . . . the need to "start up" in the spring and "pump down" in the fall is gone forever.

10. LESS INSTALLATION FUSS AND MUSS . . . RCA WHIRLPOOL central air conditioners are designed specifically for the job and are installed with special tools.



11. SMART, GOOD-LOOKING APPEARANCE . . . the units are neat and compact . . . they can be placed out in the open . . . there's no need to close them in.

12. ECONOMICAL TO BUY AND OPERATE . . . these new units bring the cost of whole house air conditioning down to the point where virtually anyone can afford it.



13. 5-YEAR WARRANTY AT NO EXTRA COST . . . the compressor and sealed cooling system are protected under the 5-year warranty. The complete air conditioner is warranted against defects for 1 year.

SELF-CONTAINED UNITS

SEPARATE REFRIGERATION UNITS AND COIL-BLOWER UNITS

14. YOU HAVE A COMPLETE SELECTION OF SYSTEMS . . . for every type of home. There are 2-hp. self-contained units that combine the refrigeration unit and blower coil in one . . . separate unit systems from 2- to 5-hp. capacities . . . and separate cooling coils for fast, low cost installation in existing heating ducts.

SALES MANAGER, CENTRAL AIR CONDITIONING DIVISION
WHIRLPOOL CORPORATION, Box ACN-2, St. Joseph, Michigan

I am interested in learning more about RCA WHIRLPOOL central air conditioners.

Name_____

Firm Name_____

Address_____

City & Zone_____ State_____

Use of trademarks and RCA authorized by trademark owner Radio Corporation of America

RCA WHIRLPOOL Home Appliances . . . Products of WHIRLPOOL CORPORATION St. Joseph, Michigan

Join up! . . . it's easier to sell RCA WHIRLPOOL than sell against it!

For more information about products advertised on this page use Information Center, page 30.

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1, Col. 1)
mathematicians are funneled into government-sponsored Sputnik academics, what happens to America's civilian progress? Like improved heating? We'll have more to say on this subject in future issues.

Dr. Peter Schlumbohm's 'Instant Ice'

At the Housewares Show in Chicago our favorite inventor, *bon vivant*, and world trade manipulator—Dr. Peter Schlumbohm — introduced the atom bomb of refrigeration:

"INSTANT ICE."

His name rhymes with "slum bum." But this inventor is nobody's fool. Dr. Schlumbohm made it big by inventing simple luxuries for the home. Example: the Chemex coffee-maker. We'll let him describe "Instant Ice" on his own terms:

"I am sentimentally attached to this—my first—invention, which I made at Berlin University, back in 1927. It led me from academic chemistry to the fascination of refrigeration and to the joy of creating scientifically correct household appliances.

"For USA summer conditions, the effect was not practical until I discovered a new method: The 2-stage cooling bath (described in my US patent 2,154,473 and its Temperature Chart). One half of the quantity of the salt is applied as a PRECOOLING BATH. Subsequently, the second half of the salt is applied as a DEEPCOOLING BATH.

"The present package comprises the specifically dimensioned brine container (described in my US Patent 1,700,813) for immersing a quart can of beer. This container is filled: (a) with the first portion of the salt, (b) with a measuring cup for the quantity of water to be added to each of the two portions (c) with the second portion of the salt, packaged in a removable box.

"Each bath is applied for 7-8 minutes. The water should be as cold as available. To assist the dissolving of the salt, the brine should be stirred frequently; either by dipping the can or by putting the lid back on the container and tumbling it.

"The salt is a fertilizer of ammonia, sold in bulk under various trade-names, such as AEROPRILLS."

All hail this discovery! Should be a good deal for people who don't want to carry a refrigerator on a hunting trip or picnic.

Incidentally, Dr. Peter has an interesting gadget for air conditioning manufacturers—of which more later.

Out of Our Mailbag

Air-Conditioning & Refrigeration Institute
Washington 6, D. C.

Editor:

Your "Too Many Cooks" editorial and your "Inside Dope" comments, including the quotations from Homer Travis, should be carefully read, studied, and acted on by the management of ALL producers of consumer durables.

I am so completely in agreement that, in reading your comments, I felt, for the first time in many years, a faint glimmer of hope that something might be done about the tragic situation that has developed in our industry since World War II.

I cannot and will not believe that consumer durables can be successfully conveyed to the public on a "serve yourself" policy.

If we could but return to the five fundamentals listed by you, we not only would return stability and profit to the industry—but what is even more important—we would give the buying public more for their dollar than they are now getting under the present chaotic distributive conditions.

Apparently, the author of "One Foot In the Door," "The Marshall's Baton," and other books that have long occupied a prominent position on my shelf is again—or should I say, still—doing battle for the good of the industry and of the public.

More power to you!

GEORGE S. JONES, JR.,
Managing Director

Heat Inc.
Nashua, N. H.

Editor:

I would like to congratulate you on your editorial "Too Many Cooks Spoil the Broth (Too Many Dealers Ruin Profit?)," which appeared in the Jan. 20 issue of AIR CONDITIONING & REFRIGERATION NEWS.

Since we are primarily interested in the Heating and Air Conditioning business, we know that many of your statements apply to this industry specifically.

This has truly been a deplorable condition and one that we have worked hard to correct as far as our own dealers are concerned. This company was founded less than three years ago, but the original manager and his sales engineers have accomplished a terrific job setting up exclusive dealers, providing them with good service and equipment, along with counseling them as to promotional activities and administrative functions.

In the short space of time this firm has developed tremendous dealer loyalty, and we are confident that this is due largely to our concern over the financial success of the dealer, as well as the volume of business he can do temporarily for us. We are firmly convinced that by being concerned over the long term success of our dealers, we in turn are assuring our own success.

I personally came with this firm as of Sept. 1, 1957 after the former General Manager had passed on. I have been connected with the industry for some 13 years, during which time I worked directly with dealers and distributors.

For approximately three and a half years prior to coming with Heat Inc. I was Manager of Distributor Development for General Electric's Air Conditioning Div.

I had an opportunity of discussing many of these same problems with those distributors, and fully realized the problems involved with respect to efficient operation, adequate sales promotion, aggressive but realistic pricing, and the end-result as indicated by the figure in the lower right corner of the financial statement.

The facts you have presented in your editorial are so realistic that I would like to pass this information along to our dealers. Is it possible for us to obtain

(Concluded on Page 11, Col. 1)

Tecumseh

engineering VISION

DEVELOPS THE BIG LINE

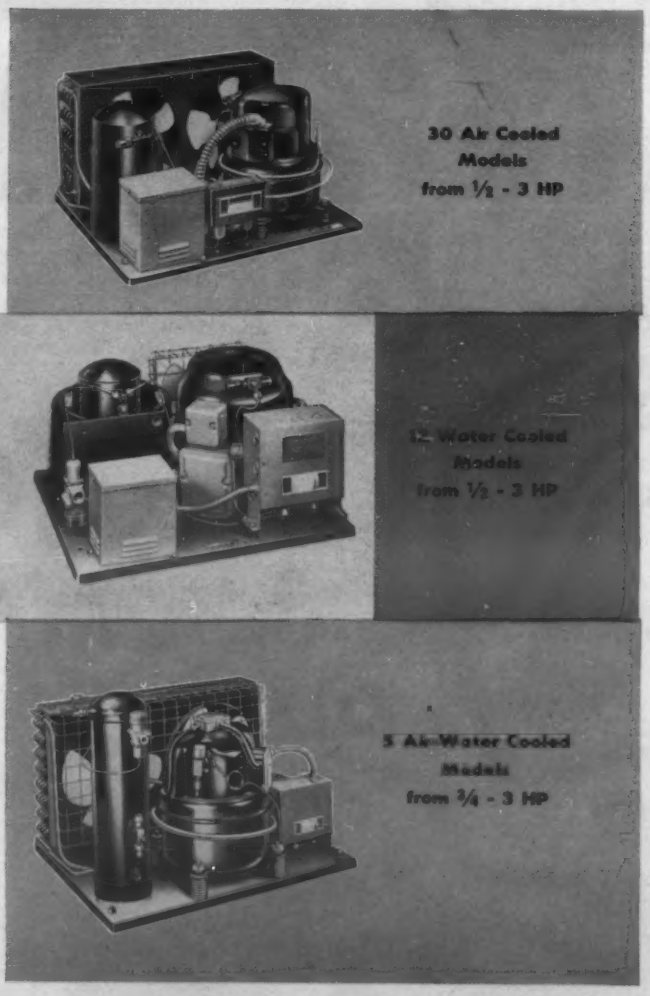
OF COMPRESSORS FOR COMMERCIAL APPLICATIONS . . .

47 models in the ½ - 3 HP range

By extending the commercial application range of the economical Tecumseh hermetic compressors we are now able to offer our customers in this field the same basic advantages enjoyed by other Tecumseh customers. This includes low initial cost through efficient mass production, less weight and therefore lower shipping expense, low maintenance costs by quality construction, and fast field replacement through a well organized wholesaler program. With 57 Air-cooled models available from 1/9 — 3HP, 30 of them in the most popular commercial range of ½ — 3 HP, Tecumseh offers the most comprehensive line in the industry.

The Tecumseh water cooled line of commercial hermetic units has been effectively increased to include 12 models from ½ to 3 H.P. High or medium back pressure applications are available in all models. Plans are under way to include a complete range of low back pressure models. The Air-Water cooled line now includes 5 models in the ¾ to 3 HP range. Where peak loads are present, and additional condenser capacity is required for short periods, these units offer the most economical answer.

Your Tecumseh wholesaler will stock and sell this equipment. See him today!



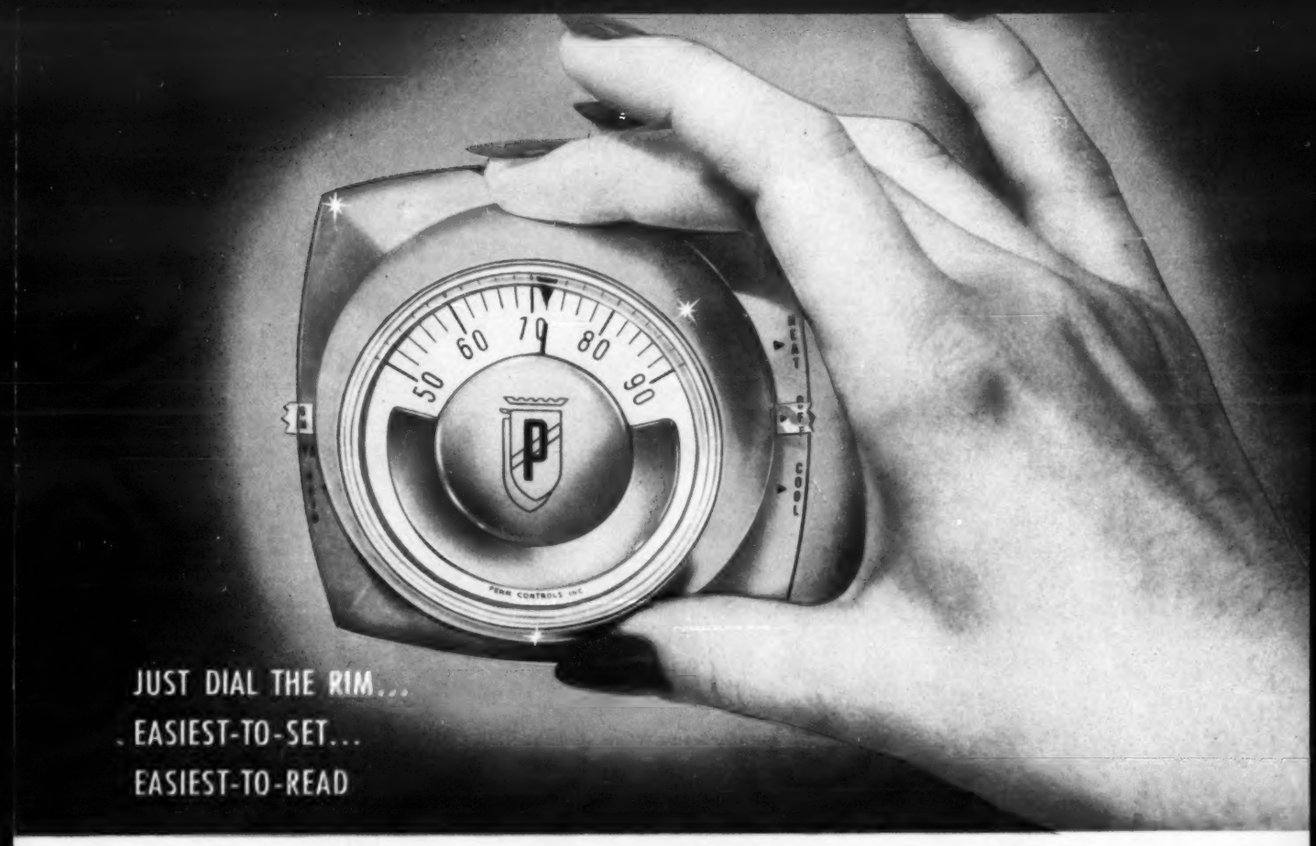
The Leader Serving Leaders in the Air Conditioning and Refrigeration Industries

TECUMSEH PRODUCTS COMPANY

MARION, OHIO — TECUMSEH, MICHIGAN

EXPORT DEPT: P. O. Box 2280, 24530 Michigan Ave., W. Dearborn, Michigan

For more information about products advertiscd on this page use Information Center, page 30.



JUST DIAL THE RIM...
EASIEST-TO-SET...
EASIEST-TO-READ

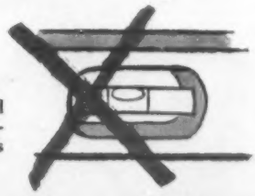
USE PENN'S NEW RIMSET THERMOSTAT TO HELP SELL HEATING-COOLING JOBS

No squinting

Extra large stationary dial face with big numerals make RIMSET today's easiest-to-read thermostat.

No chattering

Unlike other thermostats, RIMSET does not chatter to cause "on-off" operation when vibration occurs.



No leveling

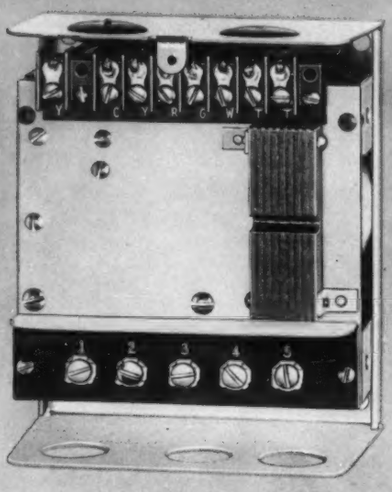
Installation is easier and accurate operation is assured because leveling is not necessary.

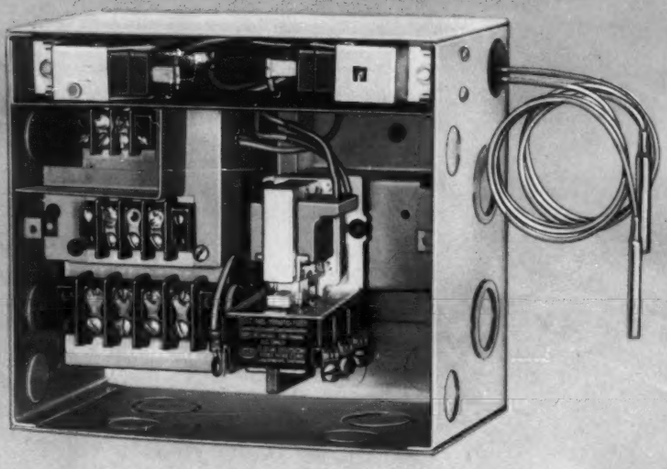
There's nothing else like it... it has accuracy, dependability, extra convenience and blendable beauty

You get extra sales power at no extra cost with Penn's RIMSET thermostat. It has features your customers want and can't get with any other thermostat. It is easier to set ... you simply dial the rim ... the scale remains stationary and is always "easiest-to-read". It has snap-acting contacts to eliminate "on-off" operation caused by vibration. And, it has modern styling and beauty to blend with any room decor.

With the Penn RIMSET thermostat unit, various interchangeable sub-bases are available for 12 different heating and cooling jobs! On your next installation, use Penn's RIMSET ... the thermostat that helps close sales then keeps customers sold.

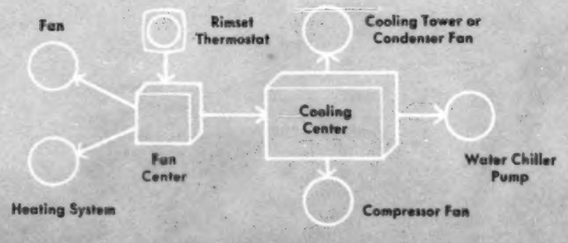
And to complete your control "package" here's the...



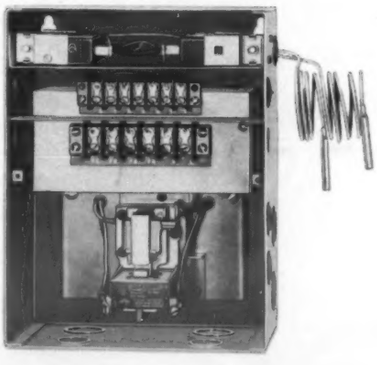


Fan Center and Cooling Center

The Fan Center is 6″ high and 4½″ wide. It combines a transformer with a fan relay, reset relay and heating relay (one or all). The Cooling Center is 7″ high and 8″ wide. It combines pressure controls, contactor, auxiliary relay for (a) water chiller pump, (b) tower pump or fan relay or both, (c) condenser fan relay. Diagram illustrates functions.



NEWEST CONTROL CENTERS
for Heating-Cooling from Penn!



System Center

Only 11″ high and 8″ wide, this compact unit combines all the control functions of the Fan Center and Cooling Center. The center panel in this unit is easily removed for ease in wiring.

Compact Penn residential Control Centers, with factory-wired internal circuits, are designed to save installation time

Here are the newest advancements in Control Center engineering design! Penn offers two basic types for all-sized residential units through 40 amps., single phase, 30 amps., three phase. For air conditioning systems with remote condensing units, a "Fan Center" controls the air handling equipment while a "Cooling Center" controls the remote condensing unit or water chiller. For self-contained systems, the "System Center" electrically interlocks in one unit all heating-cooling functions.

These Control Centers are designed to operate with the Penn RIMSET thermostat to give your customers the finest year 'round air conditioning performance. Get the complete story . . . write to Penn Controls, Inc., Goshen, Indiana.

PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 8, Col. 5)

approximately one hundred reprints of this editorial? If so, please send them along at once. If there is a small charge for this service, we will be very happy to pay for it.

We will be looking forward to more of such realistic thinking in your subsequent publications.

H. H. FALKINGHAM,
General Manager

Murray Co., Inc.
Honesdale, Pa.

Editor:

This is the first time I have written to a publication. I do want to take this occasion to congratulate you on your article that appeared in the Jan. 20 issue entitled "Too Many Cooks Spoil the Broth." To our mind you have expressed the thoughts which have been going through many dealers' minds which the manufacturers would do well to face shortly.

A few short years ago we had an enthusiastic selling organization. We had a good line of products, we had good salesmen, and last but not least we made money.

Manufacturers for some reason or other then adopted a short-sighted viewpoint. They seem willing to do anything to get short range volume without giving much thought to the over-all picture.

Manufacturers who will remain will realize that there must be a profit in the business if it is to be attractive. Otherwise, a lot of good dealers are going to turn their thinking to other items in which there is money to be made.

We would appreciate it very much if you would send us five extra copies of the issue of the NEWS. We would like to see some people read your article to help themselves.

EDWARD L. MURRAY

Middlebush Rd.
Wappingers Falls, N. Y.

Editor:

Great, your article, "Too Many Cooks Spoil the Broth."

Three main points, too, must be remedied in this rat race;

(a) Better Quality instead of Quantity; (b) Less Back Room Supplying to Discount Houses; (c) Better Repair Parts Handling and Supplying.

The first two keep me from selling domestic appliances. The third makes my type of operation a headache and heartache. The majority of consumers cannot understand the delay in getting repair parts.

HENRY F. BOEHM, JR.

WHAT . . WHEN . . WHERE

— A Guide to Coming Events of Interest

National Electrical Manufacturers Association Meeting
March 10-13, Edgewater Beach hotel, Chicago.

Gas Appliance Manufacturers Association Annual Meeting
March 31-April 2,
The Greenbrier, White Sulphur Springs, W. Va.

Air-Conditioning & Refrigeration Institute Annual Meeting
May 4-7, The Homestead, Hot Springs, Va.

National Restaurant Association Convention, Exposition
May 5-9, Navy Pier, Chicago.

Western Air Conditioning, Heating, Ventilating and Refrigeration Exhibit
May 7-11, Shrine Exposition Hall, Los Angeles.

Edison Electric Institute Annual Convention
June 9-12, Boston.

Oil Heat Institute of America Convention, Exposition
June 9-13, New York City.

American Society of Heating & Air-Conditioning Engineers and American Society of Refrigerating Engineers JOINT MEETING
June 23-25, Leamington hotel, Minneapolis.

Sheldon Coleman, President, The Coleman Company, Inc. announces a remarkable new kind of warranty . . .

Coleman DISTRIBUTORS

ALABAMA: The Coleman Company, Inc.
115 South 35th, Birmingham
ARKANSAS: Gunn Distr. Co., Inc.
1801 E. 22nd St., Little Rock
CALIFORNIA: The Coleman Co., Inc.
6480 Flotilla St., Los Angeles
250 Sylvester St., So. San Francisco
COLORADO: B. K. Sweeney Co.
1601 23 St., Denver
CONNECTICUT: Roskin Distr., Inc.
275 Park Ave., East Hartford
FLORIDA: Eckles Distributors
1707 Industrial Blvd., Jacksonville
J. D. Johnson Co., 16 W. Gregory, Pensacola
I. W. Phillips & Co., P.O. Box 400, Tampa
GEORGIA: The Coleman Company, Inc.
1022 Marietta Street, N.W., Atlanta
ILLINOIS: The Coleman Co., Inc.
2201 S. Darst St., Peoria
4930 N. River Road, Schiller Park
INDIANA: The Coleman Company, Inc.
1422 South West Street, Indianapolis
IOWA: Midwest-Timmermann Co.
114-116 Western Ave., Davenport
Sidles Co., 8 Seventh St., Des Moines
KANSAS: Coleman Heating & Air Conditioning Co., P. O. Box 2060, Wichita
KENTUCKY: Valley Distr. Co.
912 Baxter, Louisville
LOUISIANA: Walther Bros. Co., Inc.
1722 Poydras at Willow St., New Orleans
MAINE: Nelson & Small, Inc.
68-78 Union, Portland
MARYLAND: The Coleman Company, Inc.
3101 Washington Blvd., Baltimore
MASSACHUSETTS: Bigelow & Dowse Co.
2nd Ave. & A. St., Needham Heights
MICHIGAN: J. E. McMurray Dist. Co., 212 Grandville Ave., S.W., Grand Rapids
Semmler Wholesale Supply Co., 5100 St. Jean, Detroit
MINNESOTA: Heating Supply Company
410 West Lake Street, Minneapolis
MISSOURI: Coleman Htg. & Air Cond. Co.
1219 Union Ave., Kansas City; Hollander & Co., Inc., 3900 W. Pine Blvd., St. Louis; General Wesco Distr. Co., P. O. Box 271, MPO, Springfield
MONTANA: Marshall-Wells Co.
Box 2092, Billings
NEBRASKA: Sidles Co.
7302 Pacific St., Omaha
NEW MEXICO: Albuquerque Lumber Co.
501 N. First St., Albuquerque
NEW YORK: Roskin Bros., Inc.
1827 Broadway, Albany; Lee Distr. Co., 845 Washington St., Buffalo; Jericho Distr., Inc., Route 25, Centereach, L.I.; Sey-Ber Distr. Co., Inc., 104 W. Division St., Syracuse
NORTH CAROLINA: Southern Appl., Inc.
P. O. Box 2096, Charlotte
NORTH DAKOTA: Minot Coleman Distr.
Box 969, Minot
OHIO: The Coleman Company, Inc., 1825 East Fortieth Street, Cleveland; 392-412 McCoy St., Columbus; Hughes-Peters, Inc., 1128 Sycamore, Cincinnati; The Joseph B. Smith Co., 1945 Franklin, Toledo.
OKLAHOMA: Paul W. Davis Co.
825 N. W. 2nd, Oklahoma City
OREGON: The Coleman Company, Inc.
80 S. E. Taylor, Portland
PENNSYLVANIA: The Coleman Co., Inc.
133-43 W. Hunting Park Ave., Philadelphia
3370 Stafford, Pittsburgh
RHODE ISLAND: Lenz-Knight Co., Inc.
200 Conant St., Pawtucket
SOUTH DAKOTA: L. C. Lippert Co.
506 S. Cliff Ave., Sioux Falls
TENNESSEE: Indoor Comfort Distr.
520 Van St., N.W., Knoxville; Forsyth-Williams, Inc., 35 N. Lauderdale, Memphis
TEXAS: Amarillo Hardware Co.
600 Grant St., Amarillo; The Coleman Company, Inc., 4909 Reading St., Dallas; 1121 Rothwell, Section 4, Houston; W. G. Walz Co., 500 San Francisco St., El Paso; South Texas Appl. Corp., 641 S. Flores St., San Antonio
UTAH: The Coleman Company, Inc.
520 West Second South, Salt Lake City
VERMONT: Twin State Appliance Distributors, White River Junction
VIRGINIA: R. F. Trant Distr Corp.
Box 300, Norfolk
WASHINGTON: The Coleman Company, Inc.
4100 E. Marginal Way, Seattle; Marshall-Wells Co., 131 E. Main St., Spokane.
WEST VIRGINIA: Van Zandt Supply Co.
1123 Fourth Ave., Huntington
WISCONSIN: The Coleman Company, Inc.
4715 N 32nd St., Milwaukee

PHOTO: KARSH OF OTTAWA

Coleman

America's only bonded line of home heating and air conditioning

•

$500 bond on furnaces, air conditioning units, heaters and water heaters.

$1000 bond on the exclusive Blend-Air heating system.

"Now by arrangement with one of America's foremost insurance underwriters, every Coleman home heating or air conditioning unit is backed by a $500 bonded warranty. When you install the Coleman Blend-Air heating system, a $1000 bond guarantees the homeowner's comfort.*

"What will these bonds do for you?

"These bonds help you sell successfully against the toughest competition. They give you new talking points. They give you an exclusive selling benefit no one else can match.

"They help you sell quality (not just price alone!) because they are positive assurance that the company and its dealers will stand behind Coleman products. They offer still more openings for you to talk about the advantages Coleman always delivers: more comfort, longer service, and better value.

"Your Coleman distributor will appreciate the opportunity of explaining this entirely new program to you."

PRESIDENT

**The Travelers Indemnity Company, Hartford, Conn.*

Use these bonds... sell more heating and air conditioning

The Coleman Company, Inc.
Wichita, Kansas *Toronto, Canada*

More homes are heated with Coleman than any other make.

Janitrol Redesigns 2 Units for '58--

(Continued from Page 1)

input with comparable cooling combinations.

Tops in improvements, says Janitrol, is the "Dura-Tube" heat exchanger on year-round air conditioners. It is fire-fused inside and out with a fire and corrosion-resistant process known as "A-19" developed by the National Bureau of Standards. It is claimed the heat exchanger will not burn out, crack, or corrode. Dura-Tube is warranted by the manufacturer for 20 years.

Cooling section of the Win-Sum-Matic is air cooled. Remote compressor-condenser units, that operate with outside temperatures up to 125° F., are available in capacities from 22,000 to 76,000 B.t.u.h., it was stated.

Gas-Fired Units Offered In 7 Sizes

Model FVS gas-fired winter conditioners are available in seven sizes from 65,000 to 200,000 B.t.u.h. They feature "Ampli-Fire" ribbon burners and "Multi-Thermex" heat exchangers, guaranteed for 10 years. Units are easily converted in the field for year-round air conditioning, it was explained.

To be installed as either high boys or low boys, depending on location of the return air and filter compartment, the new conditioners are claimed to be "unusually quiet" due to blanket insulation in the blower compartment and use of extra large rubber cushions to mount the blower. With rear return, the 120,000 B.t.u. unit is 4½ ft. tall.

All internal parts are accessible from the front of these units, blower bearings are prelubricated and should have a minimum life of five years under normal operating conditions, the firm declares.

'Goodwill Get-Together' For 'Select Dealers'

As Janitrol introduced its 1958 modifications, over 350 "Select Dealers," from 38 states, were invited here for the first annual "Goodwill Get-Together." Qualified through maintaining high technical and merchandising standards, these key dealers were given a preview of the new sales and marketing plans of the firm.

J. I. Trimble, vice president-product engineering and development, showed dealers the two new lines of heating and air conditioning equipment, assisted by L. W. Sutherland, product planning and engineering services manager. Also included was presentation of the new "Duct-75" furnace by L. J. Monahan, assistant field sales manager, and a review of the cooling equipment line by E. H. Lloyd, special assistant.

Dealers toured the plant and then C. C. Owen, national field sales manager, discussed cooling equipment and current trends that affect sales. He stressed importance of warm air dealers in the "rapidly growing air conditioning market."

At the "Millionaire's Party" in the evening, each dealer received $1 million stage dollars for use Las Vegas style and later bid on $3,500 worth of assorted prizes which were auctioned off. Floor show acts were also featured.

The next morning, Randy Nelson, public relations director of National Warm Air Heating & Air Conditioning Association, explained to the assembled dealers the forthcoming "Operation $ Campaign" which will be coordinated by NWAHACA.

R. E. Ireland, trade advertising and promotion manager, outlined Janitrol's sales promotion plans for 1958, R. Byrd, executive vice president, Jay H. Maish Co., explained new direct mail materials, and J. T. Calhoon, local advertising and promotion manager, discussed the Select Dealer Program for 1958.

Receive Plaques

Bronze plaques, mahogany mounted, were presented to Select Dealers by R. A. Bell, vice president-general manager, for "leadership in keeping with the highest sales and management standards of Janitrol."

Dale Alcorn, vice president of Beeson-Reichert Advertising Agency, pointed up national advertising plans for 1958 and Ray Horan, of Janitrol's Institute of Dealer Management, outlined his plans to hold local sales training forums for Select Dealers throughout the country. Consumer education efforts for

(Concluded on next page)

CHECKING interior of a new year-round air conditioner offered in six sizes are J. I. Trimble, vice president-product engineering and development, and C. C. Owen, national sales manager for Janitrol Heating & Air Conditioning Div., Surface Combustion Corp.

Here is the complete packaged cooling tower story . . . and the twentieth edition is just like the first—ALL MARLEY. Every year Marley know-how and Marley production ability write new, important chapters; they are so comprehensive that they cover the field from A to Z. That's why they are the industry's

BEST SELLERS OF '58

11 Models with Nominal Capacities from 3 to 60 Tons

Hot Dip Galvanized After Fabrication—Prevents corrosion, assures longest service life

Diffusion Decks—Exclusive feature; essential to efficient initial water break-up

Close-Packed Filling Cube—More wetted surface, more performance per cubic foot

Drift Eliminators—Prolong service life of mechanical equipment; keep tower site dry

Air Inlet Louvers—Balance air flow, prevent splash-out

Marley Type L Fan—Most rugged fan used on towers of this type; non-overloading, prevents over-heating motor

Fan Venturi—Greatly reduces fan noise and entrance loss

Stainless Steel Fan Shaft—Mounted in Bronze Sleeve Bearings

Clamp-Down Design—Permits quick disassembly and reassembly of all models when necessary

MARLEY MARLEY MARLEY

For more information about products advertised on this page use Information Center, page 30.

Janitrol Units--

(Concluded from preceding page)
the coming year were outlined by Fred Kammann, president of Editorial Press Services.

A presentation of the firm's 1958 "Sweepstakes Contest," which will take 40 couples to Nassau for a six-day all-expenses-paid winter vacation was the dealer-meeting finale.

H. C. Gurney, general sales manager, sent the dealers home with this observation, "While there's plenty of speculation about how the year will wind up for the heating industry, there's no doubt this year will bring a return to basic principles of merchandising. Winners in the fight for sales will be manufacturers and dealers who knuckle down and sell like they sold in pre-boom days . . . with better products, better merchandising and advertising, better training, and better utilization of sales personnel."

'Investment Has Paid Off'

Although the Select Dealer program has been in operation for less than a year, Gurney said, "we already know that the investment in time and money by these dealers has paid off.

"In spite of a sales decline of over 15% in the heating industry, the sales of our Select Dealer group have shown no decline!" he declaimed. "To us this is evidence that our sales and marketing plans are on the right track and the reason that we face 1958 with confidence."

W. W. Allison Dies

LOS ANGELES—William W. Allison, 65, refrigeration service contractor, died Jan. 27.

Allison was active in Refrigeration Service Engineers Society organizations, and served as president of its international, California, and local groups.

Urges Civil Defense Shelters

'Modest Sums for Conditioned Shelters May Save Many Lives In Atomic Attack'

DETROIT — Declaring that present projected increases in the Federal budget will not begin to offset the aggregate cutback in business activities and consumer spending, and thus serve to halt a deflationary trend, Elliott V. Bell, publisher of *Business Week*, told the Economic Club that now was the time for increased Federal spending for such projects as a nationwide Civil Defense shelter building program.

A time of "mild recession," Bell said, could be "the God-given moment for getting started on a program of fall-out shelters.

"The Gaither report," he said, "suggests a program of building such shelters. The Rockefeller report on the status of our defenses says such shelters are essential.

"Large as this project may be, it could represent very modest per capita cost in terms of the number of lives that could be saved in the event of a thermonuclear attack.

"Why spend countless billions for massive retaliation if only a handful are going to survive to know the retaliation has occurred."

(The Feb. 3 issue of AIR CONDITIONING & REFRIGERATION NEWS reported the rumored recommendations in the secret Gaither report with reference to a nationwide shelter program against atomic attack. It pointed out that such a program might take considerable amounts of air conditioning and air handling equipment.)

Bell said that the important thing about the present economic trend is "not to permit the contraction to gather force and cumulate." He said it would be better to "run the risk of doing more than is needed than to take the chance of being too little and too late."

Arkla Raises Sights for Gas Conditioning Units

CHICAGO — Planned production of gas air conditioning units for 1958 has been upped from 7,000 units to 7,500 units, an Arkla Air Conditioning Corp. official declared at the National Association of Home Builders exposition here.

The official said that Arkla already has committments for that many units.

The company has completed engineering studies to enable it to jump production as high as 20,000 units a year as soon as that seems feasible, the official said.

Contractor Group Names Couch Executive Secy.

CHICAGO — Appointment of Henry J. Couch as executive secretary of the Ventilating & Air Conditioning Contractors Association of Chicago was announced by William A. Kuechenberg, president.

Couch has been the Chicago district manager for Connor Engineering Corp., and was previously in the Chicago office of American Air Filter Co. for 18 years. He is a past member of the board of governors, and present chairman of the Receiving Committee in the Illinois Chapter of the American Society of Heating & Air-Conditioning Engineers.

The appointment was made to fill the vacancy created by the sudden death of L. W. Rogers.

Every job deserves Marley quality and every job can have it. Whatever the requirement — induced draft, forced draft, natural draft—the tower pin-pointed for the application is in the complete Marley line. Never a need to compromise on size, style or structural material — Marley makes them all available.

And of equal importance, when you select Marley you gain two partners earnestly interested in the success of every job: your Marley distributor and Marley. The distributor who sells Marley towers has been carefully selected for his willingness and ability to serve you both before and after your purchase. He, in turn, is backed by The Marley Company's assurance that every product will be satisfactory to every purchaser — a guarantee fulfilled for 35 years.

Today's market makes this teamwork important on every job and Marley makes it available to you with every tower you install.

The Marley Company
222 W. Gregory Blvd., Kansas City, Mo.

Aquacoolers®
Nine models with capacities nominally rated from 5 to 50 tons
For installation indoors or out
Consistent, full capacity performance
Whisper-quiet operation
Requires minimum plan area
Adjustable air delivery
MARLEY
WOOD AQUATOWER
Five models with capacities nominally rated from 5 to 50 tons
Designed for maximum resistance to corrosion
Forced draft design
Can be installed in confined areas
Blends harmoniously with any surroundings
Shipped unassembled for easiest handling at job site
SPRATOWERS®
A complete range of capacities
Provides maximum water cooling economy
Non-clog bronze spray nozzles
Balanced spray system
Long-life redwood construction
Prefabricated for quick installation
MARLEY

You Asked About It

From the many requests for information it receives, the NEWS will select and publish some of general interest. In many instances, the answers will be supplied by authorities in the industry. If you do have a question or problem concerning which you think the NEWS might be able to help, be sure to state the problem clearly, and provide as much information as possible.

Q. Our problem is a supermarket-type grocery store with a 10-ft. ceiling and with about 30 ft. of meat cases of the closed type—open only when the customer is being served.

In summer, everything is fine. But in winter the meat which is put in the cases first thing in the morning turns dark by noon. The building is heated by gas unit heaters and the temperature is carried at 68°-70° F. We checked the humidity and found it to be 40% at 9:00 a.m. and 45% at 11:00 a.m.

R.A.F.—Grand Rapids, Mich.

A. Two authorities (J. H. Spence of Hussmann Refrigeration, Inc. and G. K. Bently of McCray Refrigerator Co., Inc.) supplied the same answer:

The fact that the trouble occurs only in winter is significant; actually, this problem is quite common where gas heating units are used. The discoloration is due to the carbon monoxide in the flue gas which combines with the oxygen in the cells of the meat to cause discoloration.

The answer is to vent the heaters. If they are vented, see if a suction fan in the building is creating so great a suction pressure as to draw the carbon monoxide in from the outside.

Sometimes sewer gases may be at fault. These gases cause the white fat on park and beef to turn yellow. They have the same effect on the skin of dressed chickens.

Q. We are interested in obtaining as much information as we can about the refrigeration of fur storage rooms.

C.T.B.—Chicago

A. This is a broad field. A quick summary of fur storage problems is given by the late Paul Reed in "Refrigeration Problems," Vol. J-1, available from the NEWS.

A more detailed summary and a good list of references is supplied in the "Applications Data Book" published by the American Society of Refrigerating Engineers, 234 Fifth Ave., New York City.

Then there is the Certified Cold Fur Storage Association, 500 East Third St., Kansas City 6, Mo.

Uses Reclaimed Compressors as Display To Increase Commercial Service Work

WASHINGTON, D. C. — Instead of discarding "elderly" compressors which have seen their full service life or selling them off as scrap iron, President E. E. Byrd of Commercial Refrigeration Co. here has made them the basis for a unique "traveling display."

PRIDES SELF ON NEAT, CLEAN UNITS

Specializing entirely in contract service for grocery stores, supermarket chains, drugstores, restaurants, and industrial refrigeration users, Byrd prides himself on the neat, clean equipment which his dozen mechanics leave on every job.

It is each mechanic's responsibility to see that every operating part is wiped completely clean and all grease, dust, etc., removed. Keeping the equipment as near new as possible has made such an impression on his contract customers that Byrd receives a lot of unsolicited contracts from customers who learned of his pains from others in the same business.

FIRM IDENTIFIED WITH CLEANLINESS

To make certain that refrigeration equipment cleanliness is automatically identified with the firm name, Byrd hit upon a clever idea. This was to reclaim old compressors of various sizes which are steam-cleaned and then given a like-new coat of spray paint, either black or aluminum.

One is mounted atop the cab of each service truck operated by the company, where its odd appearance is sure to catch attention wherever the truck goes.

The reason is explained in bright yellow signs which extend around the side of each of the blue service trucks operated by the firm.

The signs read: "If Your Compressor Doesn't Look Like This—Commercial Refrigeration Company Is Not Doing Your Service Work!"

The sign is followed by the telephone number in large letters plus a listing of the many refrigeration equipment lines for which Byrd has repair authorization.

The touch of humor involved in the sign, plus the eye appeal which compressors of various shapes and sizes creates, has helped put Commercial Refrigeration Co. "on the map" in the nation's capitol.

Bohn Promotes Pitts to Vice President-Mfg.

DETROIT—The directors of Bohn Aluminum & Brass Corp. elected Guy H. Pitts as vice president of manufacturing. He will oversee all manufacturing operations.

G. H. Pitts

Pitts attended the University of Michigan, receiving his engineering degree in 1940. His first job was that of foreman with a manufacturing concern. Eight years later he was chief plant engineer of the same concern.

He later served as senior staff engineer of a refrigerating equipment manufacturer. He joined Bohn in 1950 and served in capacities of chief engineer, plant manager, and manager of the Fabrication Div.

Makes Plastic Refrigerator

VIENNA, Austria — A new-type of refrigerator made of plastic material has been developed by an Austrian firm, it was reported.

Due to its special design and use of a plastic housing case, the unit, now in production, is claimed to offer improved heat insulation and lower power consumption.

THE MUELLER BRASS CO. ALL NEW

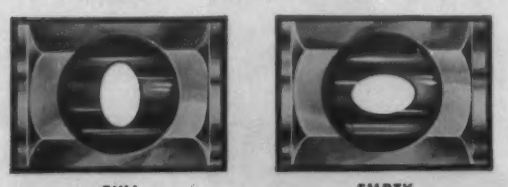
Sightmaster

THE MOST VERSATILE EASY-TO-READ LIQUID INDICATOR YOU CAN BUY

Now you can get a Liquid Indicator loaded with deluxe features at an economy price. The versatile new Sightmaster is exceptionally rugged and has withstood test pressures over 500 p.s.i. . . . far exceeding normal operating conditions. The spring compensated "O" rings maintain a constant leakproof seal, and automatically adjust to any variation of temperature or pressure . . . it just can't leak. Straight-thru design eliminates pressure drop. Sightmaster incorporates a positive light refraction method of reading . . . there are no moving parts or fragile devices to get out of adjustment. Write today for additional information and see Sightmaster's outstanding features for yourself at your wholesaler's.

get a positive reading at a glance with Sightmaster

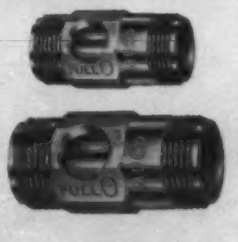
Position of the oval image in the port indicates refrigerant supply. If the oval is at a right angle to the flow, the system is fully charged. If it's parallel to the flow, the refrigerant supply is low.



FULL EMPTY

the right combination for any situation with minimum parts to stock

2 bodies and



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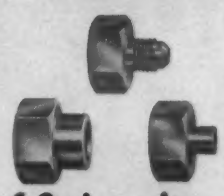


types of fittings in 1/4", 3/8" and 1/2" sizes give you

27

different size style combinations

MUELLER BRASS CO. PORT HURON 13, MICHIGAN 225

For more information about products advertised on this page use Information Center, page 30.

They Call It 'Major Innovation'

80-Ton Conditioner Employs Convection Air-Flow Condenser; No Fans, Motors

PREAKNESS, N. J.—Forthcoming installation of an 80-ton "Airvec-Condenser" in a bowling alley air conditioning installation here is being heralded by the manufacturer of the equipment, and the installing contractor, as a major innovation in the air conditioning field. The 80-ton Airvec-Condenser to be installed in the new T-Bowl bowling alleys here by the Ben Mar Refrigeration Co. of Passaic, N. J. operates entirely on the basis of convection air-flow. There are no fans, motors, belts, or electric wiring required.

R. C. Edwards, president, Edwards Engineering Corp., manufacturer of the Airvec-Condenser, and Ben Jaffee of Ben Mar Refrigeration Co. state that its installation in the bowling alley job will mark the first time a convection air-flow condenser in large capacities will have been installed for an air conditioning application. Edwards says the condenser will be made in sizes up to 100 tons.

Among the claims being made for it is a projected saving of 15 to 20% in power consumption on the job because no electrical current will be required to operate pump and fan motors.

Other features claimed for the condenser are completely noiseless operation, lower first costs, simplified electrical circuiting, and a roof load of only four pounds per sq. ft. Maintenance costs will also be at a minimum, it is said.

Expect Many To Exhibit at March 2-6 Frozen Food Show, Meeting In Chicago

WASHINGTON, D. C.—"Tempo of registration is increasing daily," announces the National Association of Frozen Food Packers, "and it now appears that some 700 companies and 2,000 individuals involved in production and marketing of frozen foods will be at the 17th annual convention of NAFFP."

Conclave opens March 2 in the Conrad Hilton hotel in Chicago and runs through March 6.

Features will include an Exposition of Supplies and Services for the industry featuring at least 60 large booths in the hotel's exhibit hall, NAFFP indicated. It was also recently decided to open up a special area on the hotel's fifth floor where prepared frozen food packers may show their products, the group pointed out.

Another feature, NAFFP said, will be a program which will cover the three main areas of the frozen food business. These are management, marketing, and production. Marketing Day will be devoted to trends and problems of chain store and supermarket frozen food departments. Several top grocery officials will participate.

Ansul Pays Dividend

MARINETTE, Wis.—A fourth quarter cash dividend of 30 cents per share was declared recently by Ansul Chemical Co.

It was paid Jan. 15 to stockholders of record Jan. 1. This payment continues the dividend policy which is $1.20 per share per year.

Harry Is Chairman, Irving President as Alter Ups Officers

CHICAGO—Announcement of changes and promotions of the officers of the Harry Alter Co. was made by Harry Alter, active head of this national refrigeration and air conditioning parts and supply distributor with branch houses in New York City, Atlanta, and Dallas.

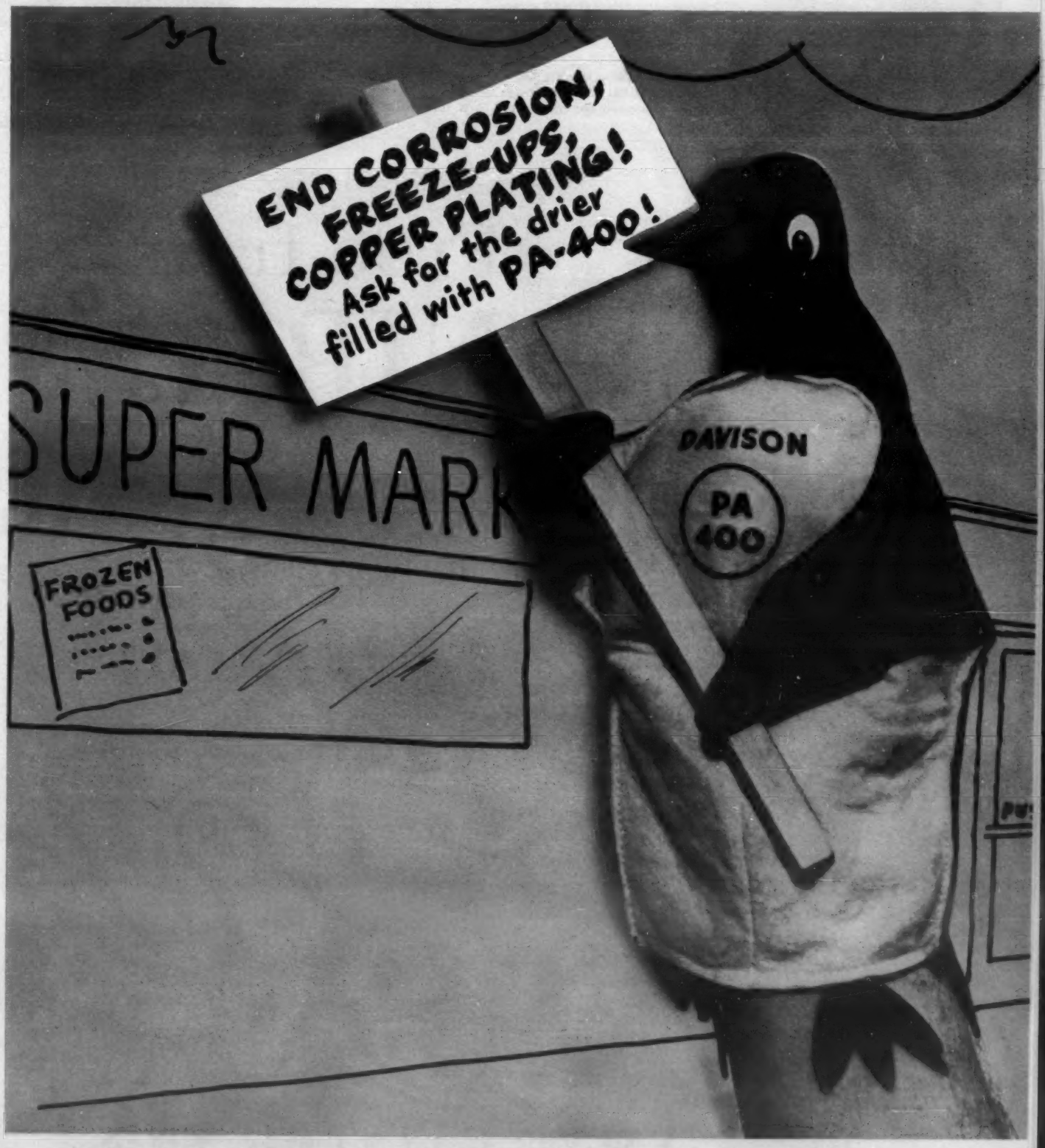
Irving Alter

They are: Harry Alter from president to chairman of the board; Irving Alter from secretary and treasurer to president; Besse P. Mostow from assistant treasurer to treasurer; N. K. Hurwitz from assistant secretary to secretary, it was explained.

James Alter from vice president to executive vice president, Chicago Div.; Warren Kahn from vice president to executive vice president, New York Div.; Martin Kent to vice president and general manager, New York; Murray Adinoff to vice president and sales manager, New York; Joseph Novotny to vice president and advertising manager; Filmore Weinstein to vice president and merchandise manager.

In commenting on these changes Harry Alter said: "On all sides we hear stories of falling sales, and diminishing profits among business houses. Under such conditions, businessmen must decide which of these three courses to follow: do nothing, retrench, or plan now to expand in anticipation of better times that are sure to come.

"We have chosen the latter course and the changes and promotions announced are designed to strengthen our organization for such expansion," the new chairman added.



ADSORBS ACIDS. Refrigerants react with water, oils and other contaminants to form acids. These acids attack metals in refrigeration systems . . . cause corrosion, freeze-ups, copper plating. But PA 400® Silica Gel removes moisture *before* it can form acids. What's more, it removes any acids already in the system! So ask for the drier filled with PA 400. Both you and your customers will be happy you did. See your distributor tomorrow.

DAVISON
CHEMICAL COMPANY
Division of W. R. Grace & Co.
Baltimore 3, Maryland

Stores Tobacco In Air Conditioned Warehouse

Coil Sized To Hold Temperature, Work as Indirect Humidity Control

By George M. Hanning

RICHMOND, Va. — What do you do when your customer wants humidity control along with cooling, but won't permit a source of heat in the structure? And, of course, cost must be held to a minimum?

That was the problem faced by Ralph Lampie, local refrigeration contractor, when he was called in to air condition a new long-term storage tobacco warehouse for the Export Leaf Tobacco Co. here.

His answer is what he believes to be the first automatically air conditioned tobacco warehouse in the country.

Export specializes in buying the choice yellow bright-leaf tobacco that is in so much demand by smokers abroad. To guard against poor crop years when little of the high quality bright leaf is available, the company must store quantities of it for three or four years.

Cannot Dry Out Or Develop Mold

The tobacco thus stored must maintain its peak quality. If it develops mold or dries out so the leaves crack and crumble, it loses a good deal of its sales value to selective overseas buyers. Thus the need for humidity control.

CHOICE YELLOW bright leaf tobacco for foreign markets is stored in this new warehouse in Richmond, Va., claimed to be the first with automatic air conditioning.

COOLING A QUARTER section of the warehouse is this 15-ton Trane air handling unit on the second floor. Another 15-ton unit on the second floor and two 10-ton units on the first floor provide all-important humidity control.

On the other hand, the company must keep its storage costs to a minimum to make a profit. The new warehouse, along with others owned by the company, are located on choice industrial property where land costs have soared.

The other warehouses are refrigerated by brine systems. They require the employment of two men around the clock to keep check on temperatures and humidity. Export wanted to eliminate this increasing labor cost with an automatic refrigeration system.

Rules Out Heat

To further cut down costs, the company ruled out any heat in the building. If electric heating elements were installed, it would have to foot a stiff demand charge for power, even if the elements were turned on only once a month. If a boiler were installed, it would face sharply increased insurance rates.

How to give the customer what he wanted?

Lampie figured the only way to do that was to forego any direct humidity control. Instead, he concentrated on sizing the coil to "perfection" in order to get close control of coil temperatures.

Because of the nature of the anticipated use of the warehouse, he figured that steady, unvarying temperatures could be maintained, thus indirectly controlling humidity.

For assistance on his problem, he called on Carl Carden of the Trane Co.

"One of the first puzzles we

(Concluded on next page)

Free from NIBCO

send today!

This free catalog for 1958 illustrates and gives complete specifications of NIBCO low pressure, pressure rated and special type bronze valves . . . including the sensational new Y-Pattern Globe and Check Valves. These are the valves that give you more shut-offs per dollar . . . fully guaranteed to operate perfectly. See your wholesaler or send coupon below.

VALVE CATALOG VC-3

NIBCO

NIBCO, INC. — Dept. H-0202, Elkhart, Indiana
Please rush free copy of your new Valve Catalog No. VC-3.
Name_____
Firm_____
Address_____
City, State_____
☐ Also send address of nearest source of supply.

LARKIN MEANS LOW OPERATING COSTS

FROST-O-TROL® AUTOMATIC HOT GAS DEFROSTER SYSTEM

The purchase price of any product is often misleading, for it precludes the cost of long-run operation. All Larkin products are engineered for the lowest possible operating costs, yet they are priced right. That's why Larkin leads the field for long-run, low-cost operation.

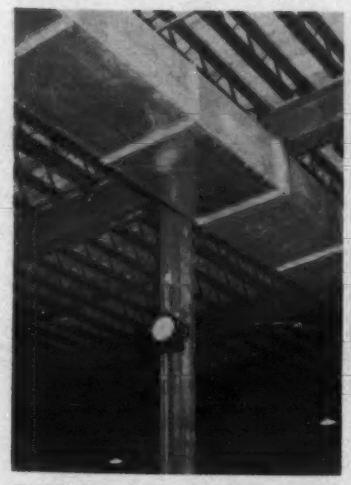
•

Manufacturers of the original Cross-Fin Coil • Humi-Temp Units • Frost-O-Trol Hot Gas Defroster • Air Cooled and Evaporative Condensers • Cooling Towers • Air Conditioning Units and Coils • Direct Expansion Water Coolers • Heat Exchangers

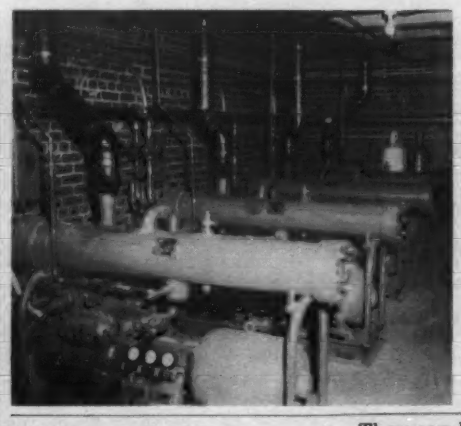
LARKIN COILS

519 MEMORIAL DR., S.E. • ATLANTA, GA.

For more information about products advertised on this page use Information Center, page 30.



TEMPERATURE AND HUMIDITY recorders are mounted near the center of each quarter of the warehouse, about 15 ft. above the floor. They are checked weekly by a warehouseman to see that humidity is kept near the 60% level at 60° F.



FOUR TRANE condensing units are installed in a machinery room entirely blocked off from the conditioned space. It is entered only from the loading dock. No heat source was permitted in the building to aid in humidity control.

Tobacco Warehouse

(Concluded from preceding page)

encountered," Lampie recalled, "was to find the specific heat of tobacco. In an application such as this, specific heat would be an important load factor.

"We tried every source we could think of in this country, but nobody knew. The closest they could come was to suggest we use the specific heat of cabbage. As it turned out, this wasn't too close.

"We finally got an answer from England. For the record, the specific heat of tobacco is 0.55 B.t.u. per lb."

Holds 60° Temperature At 60% Relative Humidity

Armed with this knowledge, Lampie and Carden produced a system that would give them a steady 60° F. temperature at an approximate 60% r. h.

The two-story, cement block warehouse is divided into four quarters, each a room 150 ft. long by 104 ft. wide, and 20 ft. high. The two rooms on the first floor are each handled by a Trane 10-hp. unit using Refrigerant-22. Those on the second floor are handled by Trane 15-hp. units using Refrigerant-12.

A single 60-ton Marley cooling tower mounted on the roof serves all units.

Walls and roof of the second floor are insulated with 2 in. of cork. There is no insulation on the first floor.

Air handling units are ceiling mounted in each room. Those on the second floor are located in the corner directly above the machinery room on the first floor. Those on the first floor are next to the machinery room, which is entirely blocked off from the conditioned space. It can be entered only from the loading dock.

Single Duct

From the air handling units, a single duct runs to the center and then across the storage room with discharge grilles spaced at intervals.

Temperature and humidity recorders are mounted on pillars in the center of the rooms, about 15 ft. above the floor. They can be lowered to eye level by a pulley arrangement. A tobacco warehouseman looks in once a week to check them.

The recorders reveal that the system has worked out as planned so far, Lampie declared. It now stands guard on mountains of crated bright leaf tobacco awaiting delivery to India and Pakistan several years hence.

Air Supports Swimming Pool Hut To Extend Season

PUMPING AIR at the rate of 6,000 c.f.m. into a plastic outdoor swimming pool hut to support the structure is this Utility Fan Corp. blower. Maintaining constant air pressure is the secret of inflation. Hut permits swimming beyond summer season and in any kind of weather. It cuts pool heating bills in half and costs about 20 times less than a permanent shelter. Hut can be inflated in 3½ to 5 minutes. The shelter is anchored to the pool with an "Aqua-Seal" water filled rim. Photo on right shows youngsters enjoying pool as parents supervise.

BETTER THAN EVER

Valve Plates and Seats for Commercial Refrigeration Compressors

A B C D
Long life, high speed, metal-to-metal seals
The only valve plate with replaceable seats
For complete details see your wholesaler or write for bulletins Nos. 606 and 606a OEM inquiries invited

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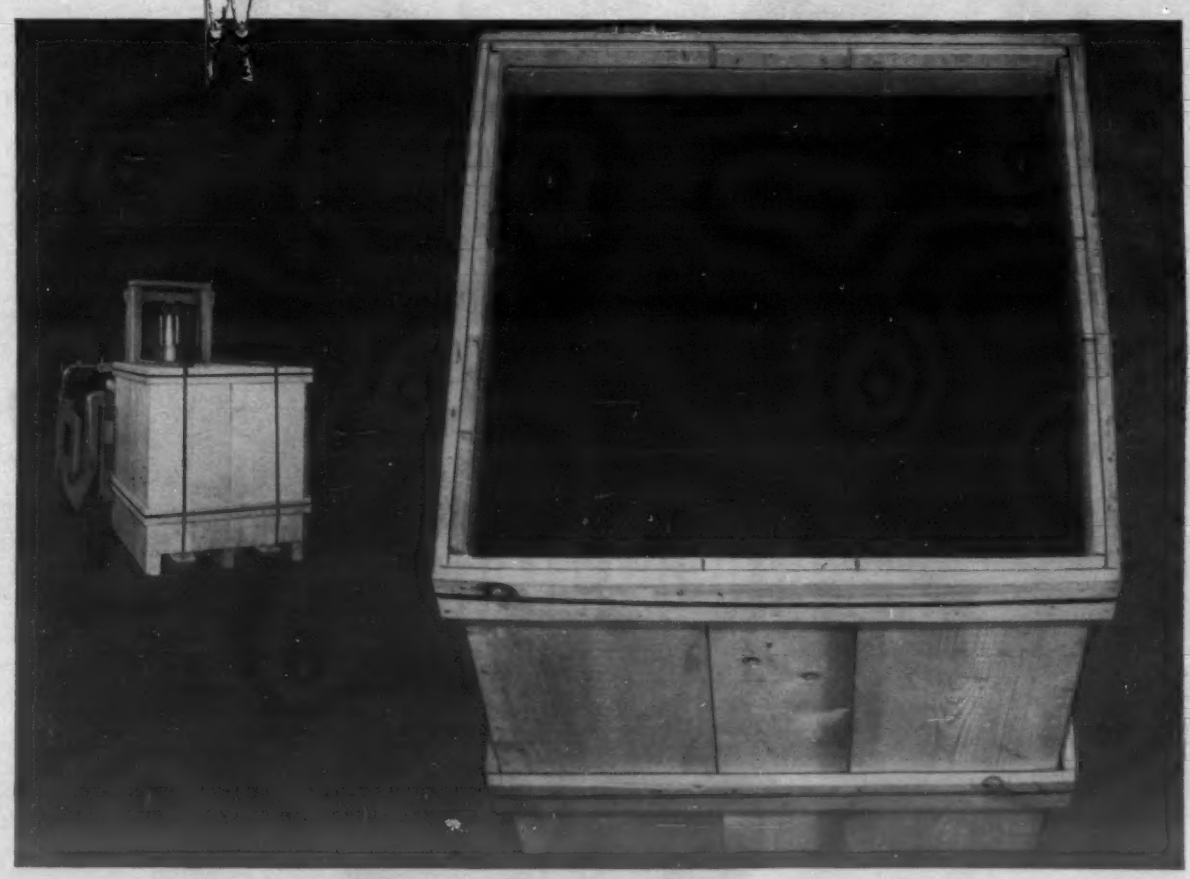
successors to Chicago Seal Co.
Merrimac 7-2666
5941 FULLERTON, CHICAGO 39, ILL.
Refrigeration Components Engineering — Manufacturing

design for safe transit



SAFE AS A BABY IN A CRADLE!

EXTRA WORKABILITY

The proper kind of temper is vital in tube used for refrigeration and air conditioning purposes. VIKING Copper Tube has been produced with the best available annealing and tempering equipment, thus assuring perfect fabricating.

ABSOLUTE, UNVARYING STRAIGHTNESS

A battery of straightening machines keeps VIKING Copper Tube absolutely, unvaryingly straight. In addition, these machines precisely temper the tube, imparting to it the correct surface hardness . . . assuring ease in fabrication resulting in substantial savings in time and labor.

ELECTRONIC QUALITY CONTROL

An electronic "Brain" detects the minutest flaw or imperfection in the walls of VIKING tubes . . . automatically discarding defective tubes. Trouble-free fabrication is virtually guaranteed — operational failures almost completely eliminated.

1500 lbs. (over 20,000 ft.) of straight, de-burred, square-cut correctly tempered copper tube is carried with "loving care" in specially built crates individually designed to suit customers' requirements. VIKING designed packaging preserves original finish and prevents in-transit damage to VIKING Thin Wall Copper Tube, because each length supports *only its own weight!*

VIKING painstakingly controls every aspect of the production of its tube, and as perfectionists, takes pride in delivering every foot of VIKING Thin Wall Copper Tube uniform and perfect.

It is because of VIKING'S pioneering in quality, uniformity and dependability that VIKING Copper Tube is today the first choice of the nation's leading manufacturers of air conditioning and refrigeration units and coils.

VIKING COPPER TUBE CO.
CLEVELAND 10, OHIO
PRECISION DRAWN SEAMLESS COPPER TUBE

BETTER MANAGEMENT of Men, Money, and Materials

Carrier Seminars Show Dealers How To Make Better Profit By Properly Controlling Day-to-Day Business Activities

CLEVELAND—Increased emphasis is being placed this year by Carrier Corp. on the importance of good business management to dealers.

Taking specific action on this matter, the company recently presented—from coast to coast—a series of 12 business management seminars.

Aim of the two-day workshop sessions was to help dealers make a better profit through better management of men, money, and materials, according to Ted Skoglund, sales training director of Carrier's Unitary Equipment Div.

Typical of these seminars was one held in Cleveland. Conducted at the Statler hotel, it was attended by some 80 Carrier dealers, plus around 50 distributor personnel and Carrier field men.

In addition to the meeting here, seminars were staged in the Charlotte, N. C., Atlanta, New Orleans, Miami, New York City, Philadelphia, Chicago, Kansas City, Dallas, Phoenix, and Los Angeles districts.

They were conducted by a "faculty" which included Skoglund, UED Sales Manager Bill Lake, Burdge Gates and Ken Vaughn of the UED sales training department, and Bob Godbee of the business consulting department. Dick O'Neill of the sales training department served as prop man.

Skoglund explained that the seminars grew out of a series of eight wholesale seminars held in 1956 for distributor people only, and reflected an expression of field need.

As pointed out in a folder promoting the seminars, they were "not a sales meeting, a promotional production, or a lecture series, but rather a serious, guided, group-participation forum concentrated on the day-to-day activities involving the management of an air conditioning contracting business."

Major subjects covered included accounting, forecasting, budgeting, budget analysis, sales manpower, sales control, pricing, inventory planning, job cost control, insurance, credit and collections, service, and banking.

Specific Subjects Discussed In Seminars

More specifically, the seminars were designed to arm every attending dealer with the following data, ideas, and skills:

How to read a profit and loss statement; how to understand a balance sheet; how to analyze his records for a true understanding of his financial status; how to plan his business for a year or more in advance; a forecast of his sales from the coming year; sales objectives for each of his sales personnel.

Also, a better understanding of pricing methods; a formula guide for inventory planning; a better understanding of cost control methods; plans for a stronger, more effective manpower organization; and practical information about tax-saving procedures, insurance protection, credit and collections, and his banking relations.

At the beginning of the meetings, each participant was given an accordion-type file, divided into sections, in which to keep the numerous administrative tools and data handed out as each topic was discussed. Some of the material was used during the seminars and other pieces were for study and use after the dealers got home.

Obviously, the subjects on the seminar agenda could not be covered completely in two days and, as Skoglund noted at the close of the Cleveland meeting, it was necessary to gloss over some items.

Seminar Designed To Whet Appetites

What Carrier hoped to do, he said, was to "whet your appetites enough so when you get home you'll follow up" in applying the information and advice provided during the meeting.

"Don't take your file home and forget it, but use it as a business management file," Skoglund urged the dealers. "You'll find the answer to many of your problems in it."

It was evident that considerable time and thought had gone into preparation of the program to keep it informative and also lively. Sessions were informal, with emphasis placed on frequent exchange of workable ideas among participants.

Many gimmicks and light touches were employed to achieve this goal and to keep interest high. Examples:

Participants were seated at tables, with each table group consisting of six or more persons including a table leader, who had been instructed in advance on how to do an effective conference job. Table leaders (distributor or Carrier field personnel) remained at the same table throughout the seminar but all others had their name cards marked with a schedule that moved them to different tables for each of the eight sessions.

Top Man At Seminar Won Carrier Stock

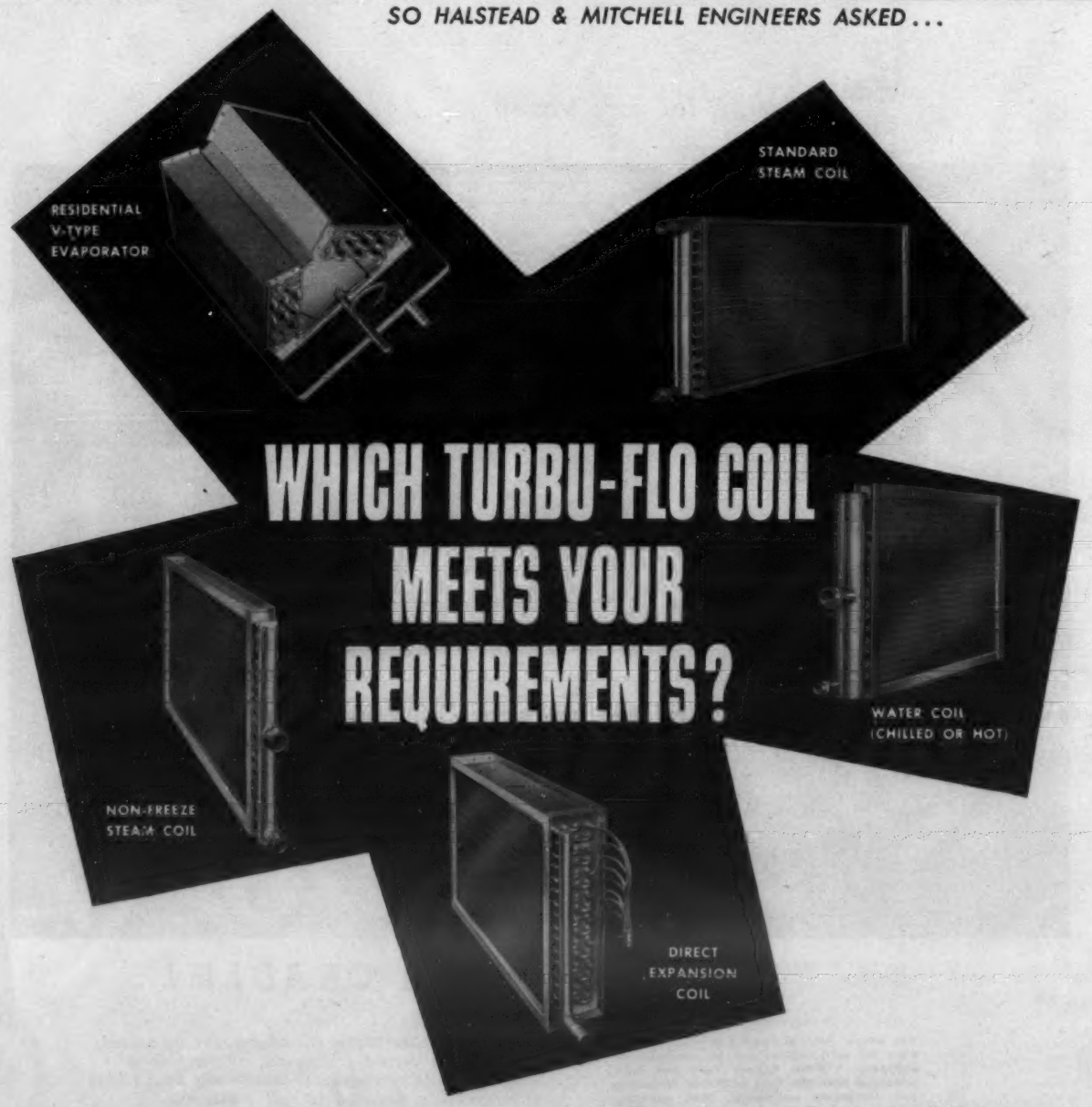
"Checks" for a certain number of points (usually 100) were written by table leaders from time to time for the person at their table who presented worthwhile ideas or comments or the best discussion of a certain topic (five or ten minutes were usually alloted for discussion at each table after a topic had been introduced from the stage. Then reports were often made to the whole group). The person who had the most points at the end of the seminar won a share of Carrier stock.

Also, there were forms to be filled out and problems to be worked, talks by "faculty" members were short, and slides were used often to list points being made or when forms were being explained. And there was a coffee or coke break during each session.

A registration fee of $20 was charged to cover part of the cost of materials, meals, and entertainment. It was felt, Skoglund commented, that "a tangible value is put on something you pay for."

(Concluded on Page 21, Col. 1)

SO HALSTEAD & MITCHELL ENGINEERS ASKED . . .



Halstead & Mitchell coils with Turbu-Flo fins are designed for rugged and long service life. And Turbu-Flo provides up to 15% more heat transfer capacity.

STEAM COILS are available in both standard and non-freeze types. WATER COILS are for use with chilled or hot water. DIRECT EXPANSION COILS are equipped with a pressure type distributor and circuited for minimum refrigerant pressure drop . . . will accommodate any make expansion valve, refrigerants 12 or 22. All coils are regularly available in from 1 to 8 rows deep, in finned heights of 12 to 36 inches, and in lengths up to 10 feet. Manifolding can be arranged for left, right or opposite-hand connections. Other sizes or special coil types can be provided to meet your specifications.

EXCLUSIVE, EFFICIENT TURBU-FLO

All coils feature the exclusive Turbu-Flo fins. Streamline design creates better air wash, lowering air film resistance and improving heat transfer; yet friction is at a minimum. Turbu-Flo fins are made of aluminum (available in copper), mechanically bonded to seamless copper tubing.

Casings are of heavy gauge steel fully protected against corrosion or of heavy gauge aluminum. Surrounding flanges simplify ductwork installation.

Write for more specific information, delivery and prices. *Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.*

HM Halstead & Mitchell

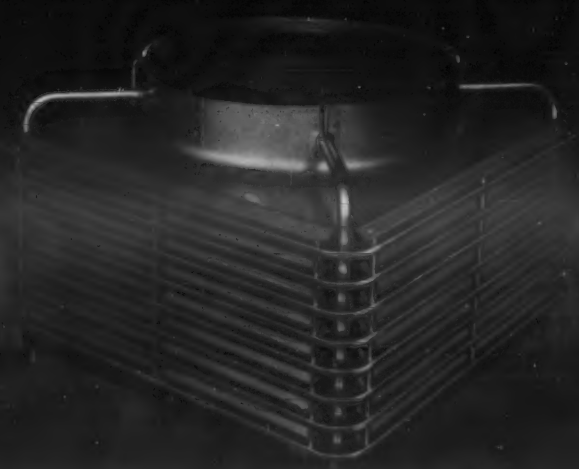
For more information about products advertised on this page use Information Center, page 30.

the quality tells . . . the quality sells

new JANITROL®

WIN-SUM-MATIC

year 'round
air conditioner.



COMPACT...

Fits in as little as 4' square feet!
Features Multi-Thermex Gas Heating Heart
and powerful air-cooled cooling.

New JANITROL® 7-point dealer sales plan gives you the Golden Key TO PROFITS in year 'round air conditioning!

Compact Win-Sum-Matic fits in little as 4½ sq. ft. of floor space. Uses single duct system to heat and cool, is easily linked to existing warm air ductwork. Handsome cabinet includes evaporator coil housing.

●

Air-cooled "PRIDE O' YARD" compressor-condenser is low, sleek, beautiful—safe for children and pets. Exclusive top-mounted fan boasts efficiency, throws exhaust air upward, protects nearby growing things.

Guaranteed by Good Housekeeping

1 A full line with a famous reputation for quality...and starring WIN-SUM-MATIC!

It's no longer news that today's booming market for air conditioning offers fat profit opportunities. The question is: How can you get *your* share? . . . At a profit!

Here, in one tidy "package", is your answer . . . the Janitrol Win-Sum-Matic, combining powerful waterless cooling and thrifty gas heating. Available in upflow and downflow models for easy installation in any home—loaded with features no other unit has. For example:

. . . Wrapped up in its exclusive "PRIDE O' YARD" air cooled compressor unit are new engineering advancements to insure powerful, economical cooling with outside air to 125° F. PLUS—salesmaking beauty that shames ordinary "dog house" models!

. . . A unique by-pass eliminates heat exchanger resistance on cooling cycle, gives correct air flow for heating and cooling without seasonal adjustments.

. . . Add-On cooling option expands your sales potential. Even though you install Win-Sum-Matic for heating only, *you protect your cooling profit*! When your customer decides on cooling, Add-On components are easily added.

There's more, much more, to set you up for big sales and profits. So take a minute now to check the rest of Janitrol's great new 7-point dealer profit plan. Then take action—get your GOLDEN KEY TO PROFITS with Janitrol!

2 new, low trade net prices

Advanced Janitrol engineering—new automated production methods—volume building sales leadership—all add up to more profits on every sale. This new Janitrol pricing plan lets you move in on competition with top-quality Janitrol products at *really competitive* prices!

3 new dealer stocking plan

As a Janitrol dealer qualified under this new plan, you'll keep your working capital *working*, instead of "freezing" it in inventory. You'll have the inventory you need for prompt deliveries, better service, year 'round.

4 new retail customer finance plan

Makes Janitrol cooling and heating easily available to the six out of ten families who haven't the cash but have the credit . . . on easy installment terms. No down payment. Up to three years to pay. Finance up to $3500. No risk or recourse to dealer, no collection problems. Eliminates red tape and delay. Keeps "hot" prospects from cooling off!

5 new local level promotions— to the rich modernization market

A high-impact, sales-producing merchandising program created by Janitrol for your needs, your market, your profit ambitions! Newspaper ad mats, radio and TV musical announcements, window and in-store displays, color-illuminated outdoor signs—all yours as a qualified Janitrol dealer. And Janitrol sets up the complete program to the last detail, saves your time for selling.

6 new builder promotion package

A complete merchandising program to help you snare your share of the new house market. Chock full of tested promotion ideas that give you a running start on competition—let you offer the builder a service that enables him to upgrade his houses with quality Janitrol equipment, appeal to more prospects, *stay competitive*!

7 new select dealer program

Today, Janitrol recognizes a new era in company-dealer relations. The days of "playing it by ear" are no more. There's a need for continuing close cooperation between both parties—an "open door" for exchange of ideas. The Janitrol Select Dealer Program makes these things possible, and gives you extra benefits besides. Business development counsel, training schools, prizes, vacations, to mention a few. Right now's the time to qualify!

JANITROL HEATING AND AIR CONDITIONING DIVISION
Surface Combustion Corporation, Columbus 16, Ohio

Please show me how Janitrol's 7-point program for SALES can give me the GOLDEN KEY TO PROFITS.

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

4481 CVS

Fill in and MAIL TODAY!

get your Golden Key TO PROFITS with JANITROL

Ask your JANITROL representative for the facts or RUSH THE COUPON TO US! NO OBLIGATION!

Complete line of gas and oil furnaces, unit heaters, conversion burners, water cooled and air cooled summer conditioners, combination heating-cooling conditioners.

Business Management Seminar--

(Concluded from Page 18, Col. 5)

Before attending the seminars, each registrant was asked to complete an advance-planning "get set" booklet containing questions about his business history and operation.

Headed "Your Intangible Inventory," this 16-page booklet was prepared to enable the dealer to make an analysis "of those factors which will determine your continued success." Factors listed were your market, reputation, competition, people, abilities, establishment, and methods.

Dealers were urged to bring the booklet to the seminar "with your notes and ideas, plus any supporting evidence which will be helpful to have along."

Where Does Your Business Come From?

The dealer was asked to answer, in spaces provided in the booklet, such questions as: Where does your business come from? What part does air conditioning play in your total business? From what elements of air conditioning does your business come? Which markets contribute most to your air conditioning business?

What is your best guess of your average cost breakdown by product group? What is your competition? What are your own best abilities?

In answering the latter question, the dealer was to indicate which of 16 management functions he handles personally, on which of these he would like advice or help, and who among his employes or business associates could provide such help.

The next series of questions were listed under the heading: "Business Management." Some of them were:

Last year, how many times did you turn over your net worth, your working capital, your inventory? What was your cost of sales to total sales volume last year? How much will your net worth increase this year? What was your break-even point last year? What will it be this year?

Pricing Policy Explored

Some others: Did your pricing policy change after you reached your break-even point? How did it change? How do you figure your break-even point? How do you budget your expenditures? How do you forecast cash position?

Other questions had to do with sales forecasting, sales manpower, sales programs, salesroom environment, inventory planning, technical scheduling, technical manpower, engineering, installation, service, and service contracts.

In addition to the booklet, seminar participants were asked to fill out an enclosed "Dealer Performance Record" sheet to include 1957 season sales (or sales estimate) of each type of equipment listed and 1957 season sales and merchandising budget. Also, they were asked to bring their last annual "profit and loss" statement and balance sheet for their own use only.

First session of the seminars was devoted mainly to accounting. Emphasized were the important things which can be learned from a properly-prepared balance sheet and profit and loss statement. Sample forms were analyzed as to what figures were out of line and what "went wrong."

Pointers on planning a budget and sales forecasting were covered next. One of the assignments given seminar participants was to fill in a rough estimating guide to determine total cost of sales per total 1958 objective, and then to complete a form on "budget for 1958 as planned in seminar."

Analyzing the budget was then discussed, with pointers being given on "blue-printing" a typical budget in terms of actual vs. budget comparisons of net sales, gross margin, and expenses. It was stressed that dangers and opportunities can be spotted more quickly by translating P&L information pictorially on a graph.

A discussion by participants on how to assure moving the volume budgeted for 1958 was called for, and then the seminar turned to the subject of recruiting and compensating salesmen. One point stressed was that it is most important to have salesmen's contracts.

The topic of effective pricing was first on the agenda as the second day's sessions got under way. Factors to be considered in pricing were outlined, and then the group was divided into three sections to compete against one another on three pricing problems previously handed out for study.

These problems involved a commercial job a builder job, and a plan and spec job. Table groups were given 20 minutes to price the job assigned them, applying the pricing considerations listed on the job sheet.

A spokesman for each of the three groups was selected to explain how the final selling price of the job was arrived at at his table, and a panel of three judges was chosen to question the "reporters," comment on the presentations, and pick the best spokesman.

Inventory planning was the next general topic discussed. A folder on the subject was passed out to help the group to "slide rule" an inventory, using an "investograph" in the folder and an attached "slide rule." Attendees were advised to use the "investograph" to determine if purchase of equipment at a particular time (e.g., off-season purchase) would be wise.

Next came a discussion of job cost control. At this point, attendees got a folder containing forms which permit the dealer to have a complete job record in one place.

Other topics on the seminar agenda were insurance, tax saving, and credit and collections. There was also considerable discussion on service, particularly how to level out the peaks and valleys of this operation.

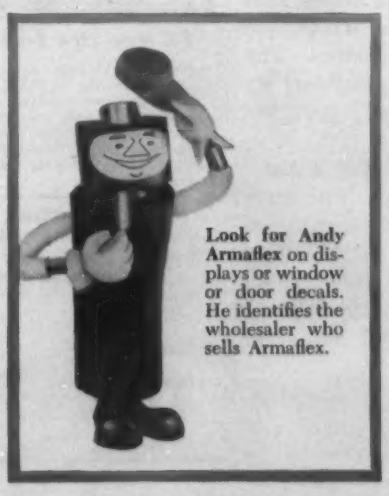
Banking was still another seminar subject. During this discussion, attendees were given a loose-leaf binder of forms which, when filled out, will give a banker the dealer's financial picture.

Five-year planning was taken up next and then, in conclusion, a look at the topic of "Priority for Progress." Dealers were advised that, upon return home, they should analyze their business to determine in what area is their biggest problem.

To help them do this, they were given a folder containing a priority-for-progress chart. They were urged to check the item which needs first attention in their business and later assign priorities to other items.

Complete new Armaflex line includes ⅜", ½", and ¾" nominal wall thicknesses. Sizes range up to 3" IPS. For larger piping, Armaflex sheets are used.

Now—3 thicknesses of Armaflex pipe covering to stop condensation down to zero



Look for Andy Armaflex on displays or window or door decals. He identifies the wholesaler who sells Armaflex.

Now Armstrong Armaflex® comes in three wall thicknesses – ⅜", ½", and the new ¾". With this greater thickness, you can apply the economical amount* of insulation to stop condensation on lines operating all the way down to zero. Armaflex is a highly efficient, flexible, foamed plastic material with a k factor of .28 at 75° F. mean temperature. Its closed cell structure is impervious to air or vapor penetration.

A big advantage of this flexible insulation is the speed with which it can be applied. Labor costs drop as much as 50%, compared to costs of applying more conventional insulations to pipes and fittings. Armaflex can be slipped over piping before connections are made, or slit and snapped on. Joints are sealed with 520 Adhesive. Fittings are easily and quickly insulated.

* Recommended Armaflex thicknesses for various service conditions are contained in free descriptive booklet. For your copy, write today to Armstrong Cork Company, 2202 Parsons Street, Lancaster, Pennsylvania.

Armstrong INSULATIONS

They'll Do It Every Time

by Jimmy Hatlo

OH, MR. BIGDOME, SIR··· LUCKY I CAUGHT THIS MISTAKE BEFORE IT WENT OUT···THIS HERE INVOICE TO LAMB, CURRY & RICE··· THERE'S A COMMA WHERE THERE OUGHT TO BE A SEMICOLON AND THERE'S A SUBJUNCTIVE ADVERB HERE INSTEAD OF A PAST PLUPERFECT···
PHOOTKISS RIDES AGAIN! HE'S GOT THE LINOLEUM WORN OUT CARRYING MOLEHILLS TO BIGDOME···
WHAT'S HE KNOW ABOUT ANYTHING BUT APPLE-POLISHING? HE THINKS A SEMICOLON IS A STOP ON THE ALIMENTARY CANAL!
HE TOOK THAT RIGHT OUTA MY HAND! WHEN HE GETS OFF TEACHER'S LAP I'M GONNA HANG A SUBJUNCTIVE RIGHT ON HIS BUSY EAGLE BEAK!
HE'LL FIND OUT ABOUT MISTAKES·· IT JUST HAPPENS BIGDOME HIMSELF DICTATED THAT··· PUNCTUATION AND ALL···
THERE'S ONE IN EVERY OFFICE···THE HOUSE DETECTIVE OF OTHER PEOPLE'S MISTAKES····
JIMMY HATLO
12-16
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Jimmy AND A HATLO HAT TIP TO "A-NONEE-MUSS" WHEREVIZ, U.S.A.

Happy Residential Air Conditioning Requires Personal Attention

WHAT ARE REQUIREMENTS for good air distribution in an air conditioned home? Answer: Pleasant temperature, proper humidity, and air flows which will satisfy INDIVIDUAL inhabitants of every room of an all-year-around air conditioned residence.

In short, each occupant should be able to "tune in" the atmosphere he or she desires. For example: Air FRESHNESS (obtained through filters and judicious introduction of outside air) is a prime factor in air conditioned comfort for dad, mom, or daughter Nancy. And it's *personal comfort* which is most important to the womenfolk in residential air conditioning.

We men are more scientific, we keep telling ourselves. Each of us daily inhales the oxygen extracted from 34 pounds of air. Lacking antiseptically conditioned air in our home, office, or auto, we are prone to catch colds, "the flu," and other respiratory diseases (even pneumonia and TB).

Consequently, at least 12 cubic feet (per breathing minute) of fresh outdoor air should be introduced into our homes, offices, and vehicles for each member of our families each moment. For self protection, healthwise!

If natural infiltration doesn't do that for you, Mr. Head-of-the-Family (and it seldom does), install an air conditioning system!

To attain maximum health and comfort, every air conditioned home must rely on the efficiency of its AIR *movement* and *distribution* system, incidentally. A millionaire couldn't maintain a healthy indoor climate for his beloved wife and children unless the aforesaid factors were engineered properly.

Here's a typical example, a test for installers: Assume that a particular room in your home has a heat loss of 6,850 B.t.u.h. Temperature of the hot air from the furnace (as it enters a room) is 140° F. You, however, desire a temperature of 75° F. in your living room.

It can be calculated that 98 c.f.m. of 140° air will heat any specific room to the desired 75° F. Thereupon, if you had your "druthers," you might choose a supply register or grille which could deliver 98 c.f.m. of air at a velocity of about 500 f.p.m. The register you select should spread the air evenly and uniformly into the heated area, of course.

Obviously more fresh air is needed for summer cooling than for winter heating. Sensible heat causes the mercury column in a thermometer to rise or fall. Latent heat, on the other hand, doesn't register on a thermometer. It evaporates water in the air and accounts for humidity—or lack of it.

Actually then, cooling your home requires a better engineered air flow installation than does a simple *heating* installation.

In a theoretically ideal residential air conditioning installation, each room might have two or more registers and grilles (depending on the quantity and velocity of air to be delivered, and the size of ducts and registers utilized) PLUS *selective controls* to suit each Mom, Father, Jimmy, and Suzie.

To be sure, after properly trained installers assay the c.f.m. requirements of a house and the heat loss or gain per room, proper duct sizes can be determined economically. How large a duct will be needed depends on the quantity of air to be delivered, the duct's length and its resistance to air flow, plus calculation of the pressure at the outlet of the air conditioner.

Another point: one or more return grilles should be specified for each room. Exceptions: In planned kitchens and "package" bathrooms a return system seldom is necessary and rarely installed.

To build an air conditioned home from scratch, it would be wise to insist on a minimum of three air-flow returns: one near the center of the house and one at each end. Additionally, any rooms with south, southwest, or west exposures should have individual grilles to insure adequate cooling.

Few centralized "all-through" blowing installations perform as well as those that utilize individual room controls which are tailored to personal occupant desires. The larger your house, the less satisfactory the less expensive "all through" jobs become.

There are "many ways to skin a cat." Too often, however, the "hepcat" who buys residential air conditioning gets skinned—in terms of personal satisfaction. At all times the installer should remember that: *Each occupant of a room in every air conditioned home probably desires different temperatures and humidities.*

Residential air conditioning is PERSONAL, therefore, and all installers should remember that observation forevermore.

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AIR CONDITIONING & REFRIGERATION NEWS

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F. M. COCKRELL, *Founder*

'The Conscience of the Industry'

Published Every Monday by BUSINESS NEWS PUBLISHING CO., 450 W. Fort St., Detroit 26, Mich. Telephone Woodward 2-0924. Subscription Rates: U. S. and Possessions and Canada: $6.00 per year; 2 years, $9.00; 3 years, $12.00. All other countries: $10 per year. Single copy price, 40 cents. Ten or more copies, 30 cents; 50 or more copies, 20 cents each. Send remittance with order.

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VOLUME 83, NO. 6, SERIAL NO. 1,507, FEBRUARY 10, 1958

WANTS TO EXCHANGE SERVICE INFORMATION

J. C. Penney Co., Inc.
Kansas City, Mo.

Editor:

After 23 years in the Industry, I have had it. I am fed up clear to here. That is what I said last July. There must be too many bubbles of sulphur, methyl, ammonia, and various halogenated hydrocarbons in my bloodstream, however, because here I am, no longer a contractor, but at least still in the Industry.

Which brings me to the purpose of this letter. I am one of several men recently employed by the J. C. Penney Co., Inc., for the purpose of supervising the maintenance, inspection, and repair of equipment in some 450 refrigerated air conditioned stores. I would like to get in touch with others in this particular field, with the idea of exchanging information for our mutual benefit.

With your wide acquaintanceship in the industry, you are the only one I know of who could know of other men doing this work. What started this letter is the article on page nine, column four of your Dec. 2 issue, "Separating Maintenance and Installation on Air Conditioning Installations."

How about it George? Can you help me out? With best wishes for your continued success as the "Conscience of the Industry," I remain

C. A. GEIST,
Field Mechanical
Service Supervisor

(Editor's Note: This letter is published with the thought that other readers in the same field might want to correspond with the author of this letter.)

IDENTIFY DISPLAY CASE CORRECTLY

The Warren Co., Inc.
Atlanta, Ga.

Editor:

In the story "See Pink Elephants While Buying Beer, Soft Drinks from D.T.'s Open Cases" published in the Dec. 23 issue, you showed a picture of the best-looking island spot display case in the business. However, the make was incorrectly identified. It's a Warren case.

EARL N. BARTON,
Assistant Sales Manager

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Princeton Researchers

Find Sunshades on Metal-Walled Bldgs. Justified by Savings In Cooling Costs

TRENTON, N. J. — To cut down cooling and air conditioning costs in buildings with metal curtain walls, an expenditure of $23 per sq. ft. of wall can be justified for auxiliary sunshade devices. The additional costs could be more than compensated for by the savings realized.

That conclusion was reached by researchers at the Princeton University School of Architecture who recently reported on results of their second research project on metal curtain walls in buildings.

As part of that project, they studied the thermal behavior of metal curtain walls in relation to cooling costs and shading devices. They investigated the general characteristics of heat transmission due to summer radiation and analyzed the resulting cooling requirements.

'Cooling Costs Part Of Integral Wall Cost'

Their report showed that cooling costs must be taken as an integral part of wall costs before thermal problems in modern curtain wall buildings can be solved.

The staff concluded that the wall design is the cooling load factor most amenable to reduction. Whether it represents a small or large share of the total load, the tons of cooling saved represent the same ultimate gain.

Conclusions

The staff reached the following conclusions:

(1) Improper orientation of a bilaterally windowed building can increase cooling loads received through the walls by more than two and one-half times.

(2) When 75% of the wall area is enclosed in unshaded clear plate glass, the 20-year cost of the air conditionnig required merely to offset the heat gain through the wall (western exposure) is estimated at nearly $23 per sq. ft.

(3) Complete shading of such a wall can reduce air conditioning cost attributed to it by as much as 83%, a saving over the 20-year term of $19 per sq. ft. of wall.

(4) Partial shading is more effective in reducing the cooling load than is the use of heat absorbent glass.

(5) The importance of the insulating value of the opaque area of the wall increases in proportion to the extent of the shading. It has little significance in unshaded walls.

(6) Cost of properly designed shading devices is less than the savings resulting from their use.

(7) Sun control devices produce significant economies only if designed to function efficiently taking into account both the overheated and underheated periods of the location where they are to be used.

The study was conducted under a grant from the Committee of Stainless Steel Producers, American Iron and Steel Institute. Prof. Robert W. McLaughlin, fellow of the American Institute of Architects and director of Princeton's School of Architecture, supervised the project.

In addition to the cooling cost study, the complete report covered five other technical areas of investigation in curtain wall planning and engineering.

ASHAE To Study Heat Transfer Through Roller-Shaded Windows

CLEVELAND—Details of the American Society of Heating & Air-Conditioning Engineers' research program on "Heat Transfer Through Windows Shaded by Roller Shades" were discussed recently at the Society Research Laboratory here.

The meeting was attended by some members of the ASHAE Technical Advisory Committee on Heat Transfer through Fenestration, representatives of the Shade-cloth manufacturers, and ASHAE Research Laboratory staff personnel.

It was pointed out that over the last 11 years, the ASHAE research program has developed data on solar heat gain through several types of plain and configurated flat glass and different types of glass blocks. The shading effects of venetian blinds and canvas and metal awnings have also been evaluated. The next logical step is the study of the effectiveness of roller shades in reducing heat loss through windows in the winter, it was noted.

This meeting provided an opportunity to ask the representatives of the shade-cloth manufacturers for recommendations regarding the types of shades which should be evaluated and the way in which the shades should be mounted.

It was agreed that roller shades of opaque, translucent, and metallic types would cover adequately the variables which are important in the study of heat transmission.

Discussion of the effect the color of a shade has on heat gain when solar radiation falls upon it, particularly when studying heat gain during summer months only, resulted in the selection of white and dark green shades for this study. These colors, it was pointed out, are the most popular and also are representative of the extreme conditions on the effect of color.

To Be Mfr's. Representative

ARLINGTON HEIGHTS, Ill. —Carl J. Bomanz has recently resigned from Alco Valve Co. to establish a manufacturer's representative company known as C. J. Bomanz Sales Co., 709 S. Mitchell St. here.

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4840 North Sewell
Oklahoma City, Oklahoma

HOW MUCH FILTER SHOULD AIR

Faster Velocities=More Changes, Cut Conditioner Efficiency—Nutting

The filter doesn't care if air passes over it at the rate of 300 f.p.m. or faster (which would cut the ratio to less than 1 sq. ft. per 300 c.f.m.), but the housewife and the air conditioner might.

Faster velocities may increase cleaning ability somewhat, but they also mean more frequent changing of filters and a reduction in equipment performance.

Arthur Nutting, vice president and chief engineer of American Air Filter Co., explains why:

In this discussion we are dealing only with mechanical type filters, not electrostatic filters.

Original equipment manufacturers often want to increase the air flow velocities through filters to save space and reduce the size and cost of their original equipment.

Efficiency-wise the air filter itself doesn't care really if moderately overrated; in fact, moderate overrating will often result in high cleaning efficiency.

The limiting factors in how much filters can be overrated rests,

(1) in the ability of the fan to draw air through the filter at higher velocities and pressure drop, and

(2) in the economics and the nuisance factor of changing filters more often because of the overrating.

Fans in domestic equipment usually operate at a low tip speed because of noise consideration) and, therefore, system resistances of all components must be kept to a minimum.

The proportionate static pressure allocated to filter resistance, therefore, is usually quite small. When we overrate air filters the resistance varies as the *square* of the velocity.

It is, therefore, evident that very little additional increase in velocity can be permitted, otherwise the fan air volume will be reduced to a point affecting the equipment performance.

The most important argument against increasing filter velocity is that high velocities result in more frequent changes of the filter with accompanying increased expense and inconvenience.

What happens when velocities are increased is illustrated by the accompanying figure.

In this case we assume that the allowable resistance for the filter when fully loaded with dust is .3 in. W.G. and that the clean resistance of the filter for the normal velocity of 300 f.p.m. is .08 in. W.G. Thus, there is .22 in. of resistance rise allowable for dust accumulation.

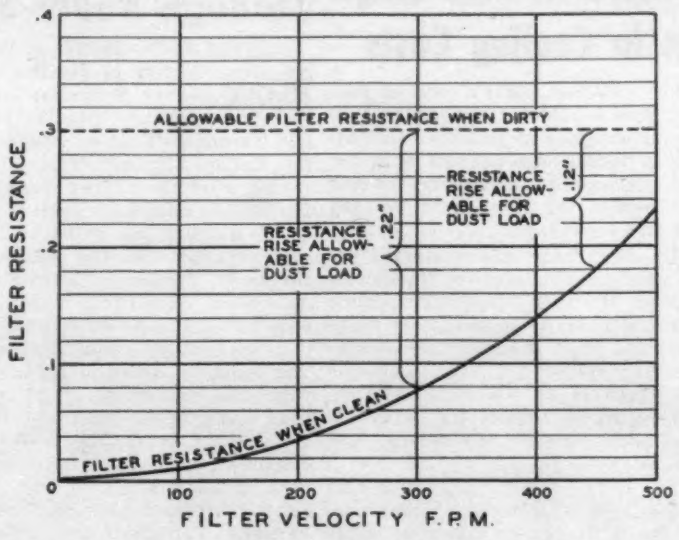
If the filter installation were reduced in size so that the velocity would be increased 50% to 450 f.p.m., then the clean resistance will be .18 in. and this amount subtracted from the allowable dirty resistance results in .12 in. resistance rise for dirt accumulation.

It is seen, therefore, that in this case we have reduced by about 50% the amount of resistance rise allowable for dust load, and we can roughly assume that the weight of dust in a loaded filter is proportional to the allowable resistance rise.

In other words the filters in this case, and considering velocity alone, will have to be changed in the proportion of

$$\frac{.22}{.12}$$ or about two to one.

We must not forget that because the velocity is increased 50% the dust is reaching the filter 50% faster, so the rate of changing filters would be something like $$\frac{.22 \times 1.5}{.12}$$ or 2.7



Recently, four prominent a why they believed the filter re conditioning set up by the Fe was too strict (Pages 16-18, Jan called for one square foot of filte It has temporarily been suspen recommendation.

This week, a filter enginee story and two more air condition

Get your copy — **Operating Costs of Residential Air Conditioning and What This Means to Dealers and Installers. By R. A. Gonzales—25¢ each.**

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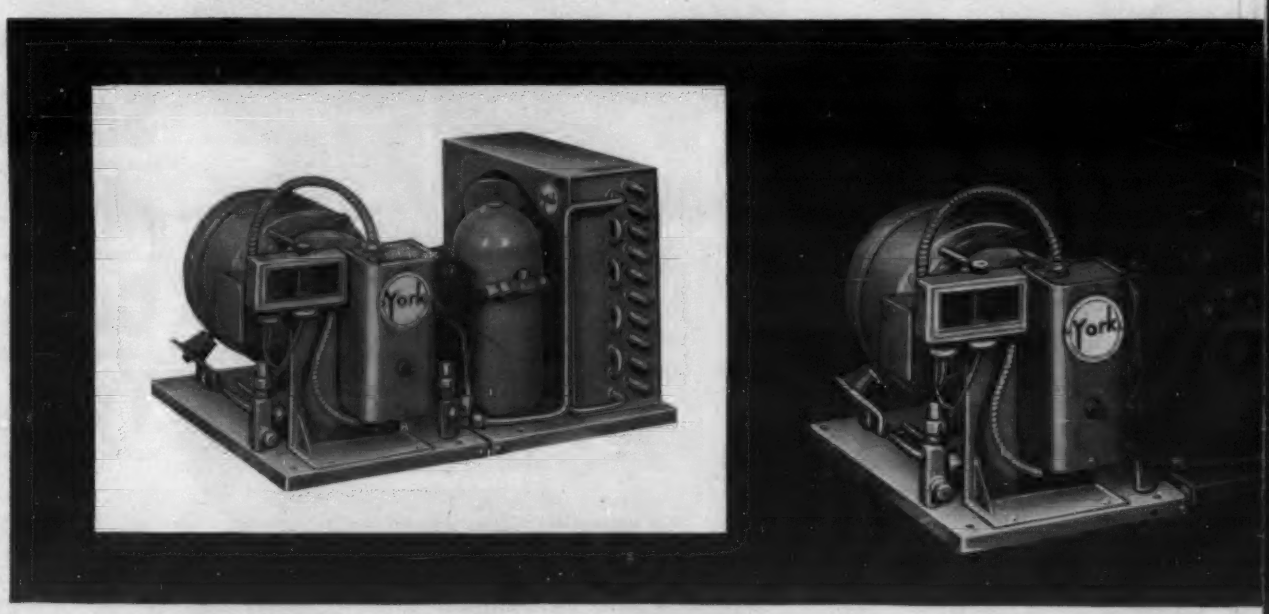

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For more information about products advertised on this page use Information Center, page 30.

CONDITIONED HOME HAVE?

ir conditioning engineers told quirement for residential air leral Housing Administration . 20 issue). That requirement r face area for each 300 c.f.m. ded awaiting a new industry

r tells the other side of the ing engineers give their views.

times as often. This obviously is a strong argument against overrating air filters.

The above approximations do not take into account the effects gained by operating at a different place on the fan curve when the air filter resistance increases.

This was omitted from the explanation in the interest of simplicity.

300 C.F.M. Rule Needed To Assure Satisfactory Operation—Miles

Mueller Climatrol
Div. of Worthington Corp.
Milwaukee, Wis.

In reply as to whether the 1 sq. ft. per 300 c.f.m. rule is a fair and reasonable one, if the AGA set-up of ruling the 300 c.f.m. as the center of the qualifying range is the basis, we believe that the rule is fair and reasonable.

This range gives a performance to the filters that will produce the desired results of filtering action by promoting good filter efficiencies and fair life.

As a manufacturer of heating and air conditioning equipment, we have always advocated large filters for adequate handling capacity and have used the AGA rule or recommendation as a design criteria. Therefore, the Mueller Climatrol heating and air conditioning equipment conforms to the ruling without any installation changes.

We also feel that it is necessary for residential air conditioning equipment to have the same proportion of filtering area because a filter is as important for summer cooling as it is for winter heating.

Here again, the length of filter life is important because of the fact that the blowers circulating conditioned air through the entire system will operate considerably more during the entire year if air conditioning is incorporated into the system than it will if only winter heating is used.

If the customer is expected to change filters only once per year on a year-round air conditioning system, it would be necessary to have two to two and one-half times as much filter area than the requirement calls for.

We believe it is reasonable, however, to require that filters be changed at the beginning of both the heating and the cooling seasons which allows the use of AGA recommendations for filter sizes.

It is understandable that severe criticism of the AGA recommendations for 1 sq. ft. of filter area for 300 c.f.m. based on 85° temperature rise could exist in the industry with some of the small, tight heating and air conditioning equipment that is built today.

Because this requirement in ME-13, if the AGA tolerance is allowed, forces some manufacturers to redesign their equipment, is no reason why the requirement should be removed.

It is necessary to use a restriction of this type to force manufacturers to improve their products, I believe that it is about time that this is accomplished.

LEE A. MILES,
National Service Supervisor

Performance Rule Would Be Better Than Design Standard—Olsen

General Electric Co.
Home Heating & Cooling Dept.
Tyler, Texas

The questions regarding proper filter area versus c.f.m. has been discussed with our various design engineers and the following answers are a composite opinion.

1. *Do you think 1 sq. ft. per 300 c.f.m. rule a fair and reasonable one?* Answer: No. *Why?* If necessary to have limits it would be better to define performance rather than size. Limiting the velocity per se is not necessary to accomplish likely "code" objectives of dirt holding and pressure drop characteristics which, so far are not defined.

2. *Does the brand residential air conditioner you represent offer this much or more filter area? If not, why not?* We generally try to use the figure of 1 sq. ft. per 300 c.f.m. for heating equipment. Where the furnace is providing the filter for cooling, the 300 f.p.m. velocity is provided up to the air flow limit of the furnace. On cooling equipment we sometimes use this much filter area, but generally less, for reasons given in 3.

3. *Do you think it necessary for residential air conditioners to have this much filter area?* Answer: Not necessarily. Although a higher velocity of 400 f.p.m. does require more frequent filter replacement, the figure is one which allows the filter area to be the same as the standard coil face area. Requiring a larger filter area would make the design awkward and in general result in larger space requirements and higher manufacturing costs, thus tending to offset any advantage of less frequent filter attention.

R. W. OLSEN, Manager,
Commercial Engineering

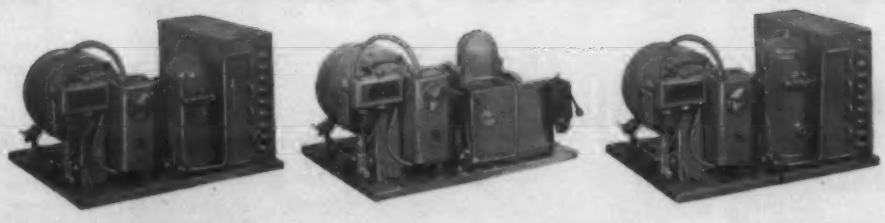
Reports $2.9 Million Sales

CINCINNATI — Keco Industries, air conditioning and refrigeration equipment manufacturer, reported 1957 sales of $2.9 million, more than double those of the previous year.

Robert G. Adair as president leads company officers re-elected by stockholders: Roger K. Braun and William J. Downs are vice presidents; Thomas R. Shepard, secretary; and Cecelia P. Matthews, treasurer.

Condenser From Compressor *METIC* Condensing Units!

There is a complete line of York Flex-O-Metic Condensing Units. Available in Air-cooled, Water-cooled and Air-Water-cooled models with sizes ranging from ⅓ thru 7½ H.P.



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The compressor section is completely factory wired! And multiple compressor sections can be installed on racks with a single dry surface condenser to meet special needs. Receivers can be changed to a larger size for multiple fixture use or can be removed for capillary use.

Plus **THESE EXTRAS:**

- **Three service valves**...all with gauge ports... let you take high pressure readings at both compressor and receiver...low pressure reading at compressor.
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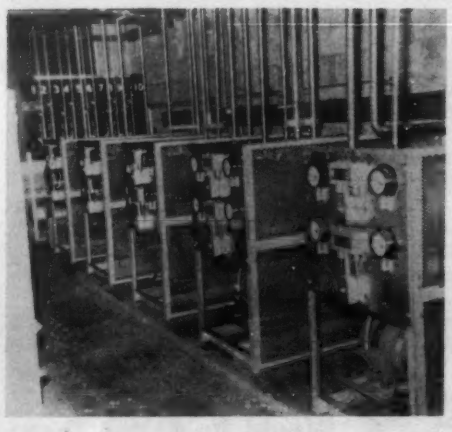
In New Store

Multi-Circuit Evaporative Condenser Bars Need for Separate Condenser at Each Air Conditioning and Refrigeration Unit



SPECIAL bench-height racks for compressors are said to conserve space and facilitate servicing in Lucky Store in Santa Clara, Calif.

SANTA CLARA, Calif. — An interesting instance of effective three-way cooperation between manufacturer, contractor, and customer's engineering department is the air conditioning and refrigeration system at the new Lucky Store here.

The contractor, Linford Air and Refrigeration Co., installed equipment specified by W. A. Stover, refrigeration engineer for Lucky Stores. Dunham-Bush products were used throughout the building.

'Index of Industry Products Used'

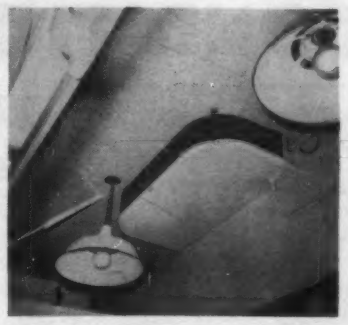
Equipment list for the installation reads like an index of industry products, it was noted. Included are cooling towers, evaporative condensers, wall-mounted and ceiling-mounted unit coolers, low temperature refrigeration systems, and condensing units.

An example of the close cooperation which existed in adapting equipment to Lucky Stores special needs was the modification made in the Dunham-Bush inner-fin evaporative condensers.

Each Compressor Has Own Circuit

Each is a multi-circuit evaporative condenser constructed so that each Brunner compressor has its own circuit. In some instances extra circuits have been reserved for future addition of extra equipment. The inner-fin tubes are calculated to match each compressor.

There is a total of ten circuits in the unit. Stover specified in what order the circuits were to be arranged and specified right or left hand as required.



MEAT cutting room is equipped with two Dunham-Bush "Ceiling-Jet" unit coolers.

Then the Dunham-Bush sales engineer at the plant in Riverside, Calif., where these units were manufactured, calculated the number of circuits required to meet each load. A drawing of each unit was then prepared and approved prior to putting the unit into production.

Cooling Water 'Brook Clear'

The evaporative condenser and the cooling tower both have water treatment and the pump for each has a bleed at the discharge of the pump. As a result, the water "is almost mountain brook clear, and the equipment nearly as clean as if it had just been installed," according to Dunham-Bush.

The Brunner compressors are all the same body. This simplifies maintenance and makes parts, gasket, and tools required for servicing these units comparatively simple, it was stated.

The racks, designed by the refrigeration engineer, are at bench height to facilitate operation. Use of the Dunham-Bush multi-circuited evaporative condenser eliminates the need for a condenser at each unit.

Keep Temperature at 55°

The meat cutting room is equipped with two Dunham-Bush "Wall-Jet" unit coolers. These units are mounted at the juncture of wall and ceiling, and make it possible to maintain a 55° temperature.

The meat storage room has two "Ceiling-Jet" unit coolers. These units are designed for installation in the center of the box. The meat freezer box is refrigerated with a Dunham-Bush electric defrost unit.

"Inner-Fin design of this unit makes possible a heating cable through the inner tube of the inner-fin coil, permitting unit to defrost rapidly and completely from the inside," it was noted.

Commenting on the installation, John Linford, head of the installing contracting firm, stated that all concerned are pleased with the results.

we are willing to bet

that 9 out of 10 cooling water systems have some scale in them!

Enough scale to cut heat exchange efficiency, and maybe cause plenty of trouble next summer when their maximum capacity is needed.

We are also willing to bet that we can show you how to avoid shutdowns next season. Two of Calgon's BIG 3 water treatment products will *get* your system in first class shape and *keep* you out of trouble.

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2. MICROMET* PLATES

Once the system is clean, *keep* it clean by using MICROMET PLATES. A single charge lasts up to six months, and the inexpensive glass mesh feeding bag eliminates costly feeding equipment. You merely hang the bags in the system. MICROMET PLATES are recommended by many equipment manufacturers. If you have algae or slime growth troubles in your cooling tower, kill them with safe, effective, non-corrosive CALGON ALGAECIDE.

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For more information about products advertised on this page use Information Center, page 30.

16 Roof-Mounted Packaged Units

With Dual Refrigeration Circuits, Compressors Provide 32 Control Steps To Air Condition Engineering Office

MOBILE, Ala. — Air-cooled packaged air conditioners will provide comfort cooling for the new 600,000 sq. ft. office building, now under construction, which will house all phases of the operations of Palmer and Baker Engineers, Inc. here

The new structure is designed to accommodate 400 employes of the engineering and construction firm, which is international in its scope, and has built such projects as the Lake Ponchartrain bridge near New Orleans.

Sixteen "Mercury" 4-hp. air-cooled package air conditioners are being located on the roof of the new structure to do the complete job of comfort cooling. Each unit is equipped with dual refrigeration circuits and compressors providing 32 steps of control for the second floor drafting room and office space.

'Provide Flexibility Of Control Needed'

The multiple packages were selected for the job, say officials of the engineering firm, because they provided the flexibility of temperature and humidity control necessary in the Gulf area.

Other factors involved in the selection of the package equipment, say the purchasers, was dependability and economy of operation, it being pointed out that 32 independent circuits preclude the possibility of complete system failure that could result in costly loss of man hours.

2-Stage Operation Holds Conditions

Two-stage operation of the individual units, said to provide close humidity control through wiring number one compressor through a cooling thermostat and number two through a manual switch, is said by the installers to make possible holding of conditions regardless of wide variations in heat load.

Each 4-hp. unit is controlled by a three-position manual switch—"off," "low cool," and "high cool." The thermostat is wired through the "low cool" position of the manual switch, providing a 2° temperature differential on this stage of the unit operation. The second stage is wired directly through the "high cool" position and holds in the second compressor continually.

This method of humidity and temperature control employs constant evaporator fan operation and allows the first stage to maintain the selected comfort condition within 2° of the thermostat setting; the second stage, under manual operation, will constantly remove humidity and prevent any sharp rise in effective temperature.

The refrigeration circuit is designed so as to locate the cycling evaporator below the other, to prevent condensate drainage across a warm coil, which can cause re-evaporation in the conditioned air.

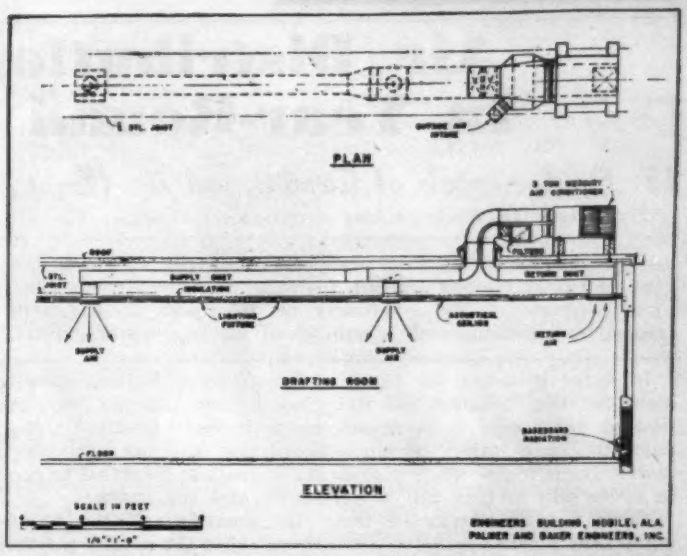
Each "Mercury" unit will provide 1,200 c.f.m. of conditioned air through two ceiling diffusers, and it is believed that these smaller air quantities will make for quieter operations.

All machinery and equipment is located outside on the roof, easily accessible for service. Routine filter changes, fresh air adjustments and inspections can be made with ease.

Baseboard Radiation Hot Water Heating

Heating for the new structure will be provided with a baseboard radiation hot water system.

An outside air intake located in the return air system near the unit is manually adjusted to provide the percentage of fresh air needed for ventilation. The ventilating feature will be used year around.



SCHEMATIC design of air-cooled, roof-mounted packaged air conditioning system and baseboard radiation hot water heating system for new Palmer and Baker Engineers, Inc. office building in Mobile, Ala. Each "Mercury" unit of the 16 will provide 1,200 c.f.m. of conditioned air through two ceiling diffusers with the belief that smaller air quantities will make for quieter operation.

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FANCY-FREE FAN: *IM-pak

IM-pak CHANGES TO ANY OF 4 POSITIONS—WHILE IN PRODUCTION! "Fancy-Free" is the word for Utility's new IM-pak Blower with Interchangeable Mounting—but it's fancy-free in a way you'll like! IM-pak's complete flexibility gives you an across-the-board stock that covers up to 98% of blower applications for residential air-moving equipment. The key is the Interchangeable Mounting. The two housing supports and motor mount bracket are shipped unattached to the unit, but with all hardware needed for rapid installation. Simply adjust the angle of discharge to any of *four* positions, and quick as a wink, the job is done. No oil cup problems, due to IM-Pak's sealed ball bearings; and the blowers are also available with a specially designed interchangeable sleeve bearing mount which is easily adjustable and permits time-saving production-line switches. IM-pak is sufficiently fancy-free to adapt to your manufacturing needs—without top-heavy inventories of blowers or many unassembled parts. Of course it has all of Utility's famed quality engineering built right in... quality that complements the excellence of your own equipment. Proof again that—*YOU CAN'T MATCH UTILITY FOR PRODUCT AND PRICE!*

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Air Distribution Requirements In Year-Round Air Conditioning

13. Fundamentals of Conditioned Air (Cont.)

By Frank D. Klein, Chief Engineer, Governair Corp.

Frank Klein has been associated with the air conditioning and refrigeration industry for over 20 years. An engineering graduate of the University of Michigan, he has held executive positions with a number of leading manufacturers.

In order to select the equipment for the "creation" of the desired conditions it is necessary to know other psychrometric facts which when placed in order will in turn fall in or without the boundaries of the equipment available.

Water as such from here on will probably have more importance in our processes of thinking and planning than ever before. Moisture in air atmospheres in the right proportion and correlation is imperative to good health and the Psychrometric Index of Comfort. Out of proportion and uncorrelated it is the greatest deterrent to good health and the Index.

In creating COOL atmospheres when the outside weather is hot we must above all else control and in the majority of cases (other than extremely dry climates) "wring" excess moisture from the air by condensation. In creating warm atmospheres when the outside weather is cold, we must in the majority of cases (except in extremely humid climates) "add" moisture to the air, or maintain that which will be normal.

Vapor Pressure Of Water

In controlling water in air atmospheres we encounter a new term we have not used as a specific thus far, the Vapor Pressure of Water. To illustrate the action of the Vapor Pressure of Water on the same medium, yet in two different states, that is water as a liquid and water as a vapor, consider the following.

Take two jars, such as wide mouth fruit jars and fill them half full of water. Place a screw cap self-sealing lid on the one and let the other stand open and free, to the atmospheric air. Let the two stand for an indefinite period and observe how the water in the open jar eventually evaporates into the air, while the sealed container retains the volume of water. This illustrates the term Vapor Pressure of Water, for it is the difference in the Vapor Pressure of the water in the open jar and the Vapor Pressure of the air above it that accounts for this phenomena. This differential varies with the temperature of the air above it and the percentage of water vapor in the atmosphere.

The Vapor Pressure of an air atmosphere is dependent on the Dewpoint Temperature. As long as the Vapor Pressure of the water in the open jar is greater than the vapor pressure of the air atmosphere above it, evaporation will take place. When the temperature of the water in the jar is greater than the Dewpoint Temperature of the air atmosphere above it evaporation will take place.

As evaporation of the water in the open jar to the air atmosphere above it takes place, it continually mixes with the atmosphere and because of the more or less unlimited volume of air into which it can mix, the differential between the two pressures continues. On the other hand the partially filled closed jar has above it a certain amount of air. Water will continue to pass into the limited amount of air above the water until the two pressures will equalize. At this point evaporation of the water to vapor in the air will cease.

Dewpoint Temperature Continues To Rise

Furthermore, because the Dewpoint Temperature of the limited volume of air in the closed jar continues to increase as evaporation takes place, until evaporation ceases and the two pressures equalize, the Dewpoint Temperature of the air continues to increase.

Let us suppose we have left the closed jar for the necessary period of time for this equalization of vapor pressures to take place and that the volume of water in the jar as liquid has decreased due to evaporation into the air atmosphere above it. We make a mark on the jar, and then place the jar in a refrigerator where we can lower the temperature of the water. Now if it were possible to lower the water temperature and maintain the air temperature above it (which of course in this case would be impossible), we would find that the water escaped into the air as vapor would return as liquid to the water, which of course explains the process of condensation.

However, as a more practical reminder of this process, we know that certain or all air atmospheres other than Dry Air contain a certain amount of water vapor. Furthermore, from the illustration above we know that when an air atmosphere, containing water vapor, of a higher temperature is brought into contact with any surface capable of heat transfer, of a lower temperature, condensation of the water vapor in the air will take place on this surface.

Points Made

Thus the entire points made above are simply this: evaporation or condensation of water occurs on a basis of the relationship of the temperature of the water in contact with an air atmosphere and the Dew-

(Continued on next page)

I recommend American Blower Packaged Air Conditioners to my customers. *Here's why . . .*

There's a unit for every business and they're built to last!

With a complete range of sizes, both air and water cooled – competitively priced, I can fill exact air-conditioning needs . . . whether for a factory, office or store.

These units have the quality long associated with American Blower products. Each one is ruggedly built and skillfully designed for years of trouble-free performance.

They're easy to install

Just simple connections to either type unit. Air cooled – suitable for indoors or outdoors, with or without duct work. All units are easy to clean and service.

There's sales help when needed

American Blower has 73 branch offices well-staffed by trained sales engineers who are ready to help in unit selection on large air-conditioning surveys.

American-Standard,* American Blower Division, Detroit 32, Michigan
It pays to install American Blower Packaged Air Conditioners

*American-Standard and Standard® are trademarks of American Radiator & Standard Sanitary Corporation.

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U.L. & A.S.M.E. WATER-COOLED CONDENSERS ½ TON TO 15 TONS and LIQUID RECEIVERS for EVERY REQUIREMENT

Write for our NEW Catalog

STANDARD REFRIGERATION CO.
332 S. Hoyne, Dept. C
Chicago 12, Ill.

For more information about products advertised on this page use Information Center, page 30.

Air Distribution--

(Continued from preceding page)

point of that air atmosphere.

Water and Air will surrender heat to each other under given sets of conditions, as we found in previous discussions, particularly the illustration outlining the action and operation of evaporative cooling. Moisture and heat will be transferred from an air atmosphere when it is brought into contact with water whose temperature differs from the Wet Bulb Temperature of the air.

How Process Works

Providing the water temperature exceeds that of the air Wet Bulb Temperature, the temperature of the water will be lowered and the Wet Bulb Temperature of the air raised. Conversely if the water temperature is lower than that of the Air wet bulb temperature, the temperature of the water will rise and the air wet bulb will fall.

In these processes of heat exchange though the water temperature rises or falls it will never rise or fall to the point of temperature originally observed as the Wet Bulb Temperature of the air prior to contact. For instance when warm water is brought into contact with an air atmosphere of lower temperature, we know that the air temperature will rise and the water temperature will fall. However, the ultimate temperature of the water though higher than the ultimate temperature (wet bulb) of the air will never be as high as the original air Wet Bulb Temperature.

This process of heat exchange between ambient temperatures and water is of vast importance in water-cooled condenser application where water-savers are employed. The process of heat exchange between air and water is also a controlling factor, as we have found out, in maintaining the Physiological Index of Comfort.

Spells Comfort Or Discomfort

The conditioning of air temperatures in confined spaces to the proper Wet Bulb, in the cooling cycle, spells comfort or discomfort to human occupancy and accompanying Latent Heat quantities.

Cool air discharged into a confined space, whose Wet Bulb matches or exceeds that of the atmosphere in the space, will not allow for heat transfer to take place; the same thing is true of air used in the heating cycle. The control of water vapor content to allow latitude for the water vapor pressure phenomena becomes one of the most important processes in creating air atmospheres for human comfort.

Can Analyze Reaction

Reaction of air atmospheres to the processes of change in the heating and cooling cycle in observance of the foregoing can also be analyzed by the Psychrometric Chart.

The next section will take up some characteristic conditioning problems that face air conditioning engineers in residential year-round systems, and analyze these psychrometrically in order to determine the latitude of equipment needed.

(To Be Continued)

Walton Sets 'Quality' Humidification Drive

IRVINGTON, N. J. — "More people are aware of the benefits of humidification now," according to Walton Laboratories, Inc. here, "and they are now demanding from their heating dealer a better means of introducing this moisture into the home than has previously been supplied."

Walton called attention to its merchandising program for quality humidification which is directed both at the dealer and consumer level.

New distributors in key markets are given three mailers to be sent out to dealers in local trading areas. These mailers are developed around a strong shelter magazine and medical profession advertising which Walton has conducted over the years, it was pointed out.

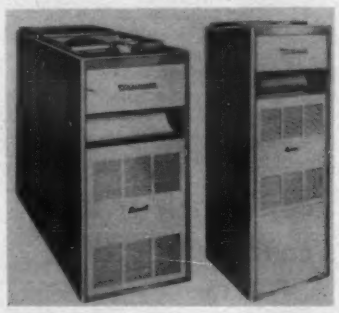
Williamson Claims 'Seal-Tite' Halts Air-Leakage In Ducts, Pipes, Fittings

CINCINNATI — The Williamson Co. announced that "Seal-Tite," the exclusive design principle to prevent air-leakage in Williamson duct, pipe, and fittings for heating and air conditioning, has now been applied to the completely re-designed 1958 line of "Special Series" gas and oil units.

The new design for Williamson warm air units was inspired by the successful performance of Seal-Tite fittings since their introduction by the company during the past year, it was stated.

All gas models in the Special Series line are A.G.A. approved.

The units are completely assembled, internally wired, and fire tested at the Williamson factory, according to the announcement. In addition, they are convertible from oil to gas.



BOTH oil and gas-fired furnaces, made by Williamson Co. for 1958, are produced in "Lo-Boy," "Hi-Boy," and counterflow models in sizes ranging from 75,000 to 150,000 B.t.u. input.

The new furnaces carry a 10-year guaranty. Both oil and gas types are manufactured in Lo-Boy, Hi-Boy, and Counter-Flow styles in sizes ranging from 75,000 B.t.u. input to 150,000 B.t.u. input.

Especially designed for use with cooling, each unit is easily converted into "Yearound" air conditioner, the company said. The cooling coil and outdoor, air-cooled condenser can be added when the furnace is installed or any time thereafter.

The Special Series Furnace has two-tone decorator-gray cabinets. Small size of the new Seal-Tite cabinet is said to permit installation in closets.

Declares Dividend

WEST HARTFORD, Conn.— Dunham-Bush, Inc.'s board of directors recently declared a dividend of 15 cents a share on common stock payable March 14 to stockholders of record Feb. 28.

In addition, a dividend of $1.25 per share on 5% cumulative preferred shareholders was declared, payable the same date.

AN ENTIRELY NEW DESIGN
OH BOY! MICRONIC FILTRATION TOO
LOOK AT THAT TRANSVERSE FLOW
ABSO-DRY PRESSURE SEALED "THEY HISS & TELL"
BRASS END CONNECTIONS— EASIER TO SEAL
HIGH WORKING PRESSURE—500 PSI
LOOK! GRANULAR DESICCANT TOO
CERAMIC FIRED DESICCANT BLOCK
NO FOOLING, LESS PRESSURE DROP
ABSO-DRY® PRESSURE SEALED DRIER

"DRI-COR"...

a New Name—a Finer Filter-Drier

■ You can expect the best from Henry. Here's the new "Dri-Cor" Filter-Drier. It incorporates an activated ceramic fired desiccant filter core for micronic filtration in combination with granular desiccant for high efficiency drying with low pressure drop. Drying and filtering are properly proportioned.

Like other Henry Driers the "Dri-Cor" is thoroughly reactivated and pressure sealed at the factory, through the exclusive patented Henry Abso-Dry process. This assures maximum drying efficiency at time of installation.

"Dri-Cor" Filter-Drier cartridges with the same design features are also available for Henry Cartridge Type Driers. Definitely a "must" for those who demand the best.

See Your Local Henry Jobber

HENRY VALVE CO.

MELROSE PARK, ILLINOIS (Chicago Suburb)

Cable: Hevalco, Melrose Park, Illinois

VALVES, DRIERS, STRAINERS, AND ACCESSORIES FOR REFRIGERATION, AIR CONDITIONING, AND INDUSTRIAL APPLICATIONS

LISTED BY UNDERWRITERS' LABORATORIES, INC. UNDER RE-EXAMINATION SERVICE FOR MAXIMUM WORKING PRESSURE OF 500 PSI

'Drop-Leaf' Oven Door Serves as Shelf

——KEY NO. H-220——

DAYTON — New built-in wall ovens with a "drop-leaf" door, which not only serves as a shelf for loading and unloading but also swings down, have been announced by Frigidaire Div., General Motors Corp.

New clean-lined sheer look styling is featured in new models. Frigidaire also is introducing new "spatter-free" automatic broiling in built-in wall ovens to eliminate oven cleaning.

To clean the oven the homemaker simply releases control levers on either side and the door swings down, out of the way, like a drop-leaf on a table. She can stand close to the oven and clean the interior easily without reaching across the door.

Adds Flexible Duct Connectors to Line

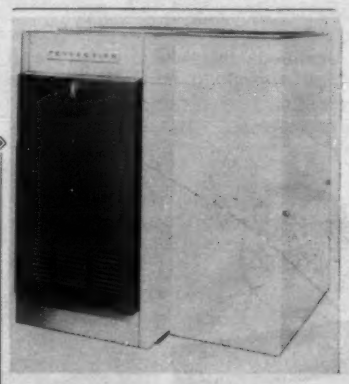
——KEY NO. H-221——

CHICAGO — Two new flexible duct connections recently have been added to the "Flexi-Duct line manufactured by Grant Wilson, Inc,

New Flexi-Duct types C-6 and C-10 for use on the "cool" side of heating and air conditioning systems are made of heavy woven canvas fabric.

——KEY NO. H-222——

CUSTOM MODEL Westinghouse Electric Corp. dehumidifiers feature a quick action humidistat which starts the unit automatically when humidity rises and stops it when the proper degree of dryness is reached.



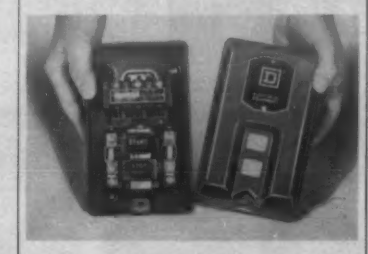
Oil Furnace Line Offers New Styling

——KEY NO. H-223——

CLEVELAND — A new line of oil-fired furnaces with advanced engineering and styling features has been introduced by Perfection Industries, Div. of Hupp Corp.

The new line which is available in standard or deluxe and in basement or high boy models (for installation in limited space in basements, alcoves, or utility rooms), is claimed to offer unusually quiet operation because of a newly designed oil burner, combustion chamber, blower, and other air handling components. The new burner and the improved stainless steel combustion chamber virtually eliminates burner noises and flame pulsation. The burner with special air adjustment is readily accessible for adjustment or service in the new design, the company said.

All units feature a two-tone finish—eggshell white with silvertone brown trim.



Makes Available New Manual Starter Line

——KEY NO. H-224——

MILWAUKEE — Now available is a completely new line of Square D class 2510 integral horsepower manual starters, in NEMA Size 0 and 1, for control of motors up to 7½ hp.

New design features a heavy-duty, toggle action operating mechanism which gives positive snap-action opening and closing of the contacts, with no dead center position, the firm stated.

Trip-free overload protection is provided by melting alloy type relays of Square D unit construction. Self-centering pushbuttons give visual indication of an overload condition.

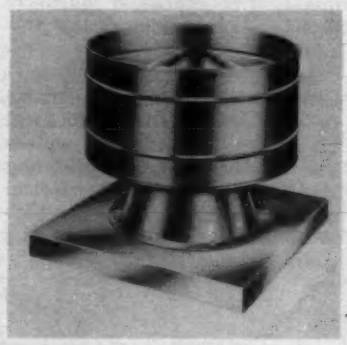
Announces Metal Choice for Coil Service

——KEY NO. H-225——

NEW YORK CITY — Niagara Blower Co. has announced a new service in the manufacture of coils for various heat exchange duties in process industries.

A complete range of choice is offered in the metals from which these coils are made, including aluminum, copper, stainless steel, and steel. Coils are manufactured in both prime surface and extended surface types.

Coil types include series flow, serpentine coils, parallel flow coils with special headers, fully cleanable coils, variously partitioned coils, and coils with bends to various radii. Coils for pressures up to 3,000 lbs. are also available.



Ventilators Feature Seamless Spun Bases

——KEY NO. H-226——

PHILADELPHIA — "Seamless Spun Bases," produced by Penn Ventilator Co., Inc. is a new development for small square to round transition bases.

Construction is of durable spun aluminum complementing modern architectural trends. One piece, weather tight, and properly tapered proportions; this device also provides a built in gutter.

Tubes Self-Metering For Epoxy Compound

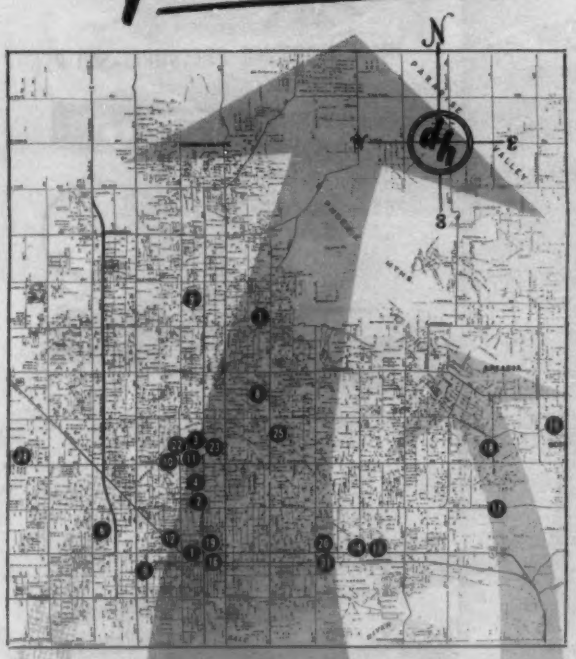
——KEY NO. H-227——

JERSEY CITY, N. J.—A new aluminum-filled epoxy resin compound, recently developed by Smooth-On Mfg. Co., is being marketed in self-metering tubes to give convenience and economy.

"Metalset A4," a resin-catalyst system, comes packed in two collapsible tubes. The proper proportions of resin and low-toxicity catalyst are accurately measured automatically by squeezing out identical lengths of each material from its respective tube.

courtesy DRAYER-HANSON and E. B. BOMAR (SALES AGENT)

AIR-CONDITIONED *Phoenix!*



1. First Presbyterian Church
2. Central Methodist Church
3. 3300 Building
4. Central Medical Bldg.
5. Arizona State Highway Dept.
6. Carl Hayden High School
7. Rose Lane School
8. Madison School No. 5
9. Madison School No. 6
10. St. Joseph Nurses Home
11. First National Bank, Thomas & Central Branch
12. Egyptian Motel
13. Sands Motel
14. Highway House Motel
15. Valley Ho Motel, Scottsdale
16. Down Town Motel
17. Motorola Research Lab.
18. Motorola Western Electronic Center
19. Republic & Gazette Newspaper
20. Arizona State Hospital
21. Flamingo Motel
22. Park Central Shopping Center
23. Central Investment Co.
24. Banks Medical Bldg.
25. KTVK Television Studios

The Burst-At-The-Seams activity that is today's Phoenix, Arizona, can best be measured by these diversified Drayer-Hanson air conditioning installations, recently sold by the E. B. Bomar organization, 914 W. Madison Street, Phoenix.

One of D-H's live-wire local-area Teams ready to assist in your engineering-application problems.

Request name of Sales Agent nearest you

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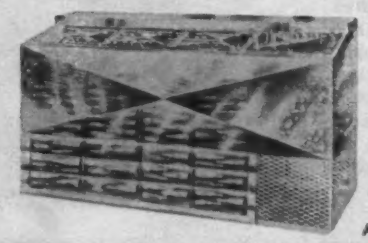
DIVISION OF NATIONAL-U.S. RADIATOR CORP.
3301 MEDFORD STREET
LOS ANGELES 63, CALIFORNIA
CABLE: PORTRADE LOS ANGELES

"A CASE OF COOL JUDGMENT"



FLO-COLD DRINKMASTER
STAINLESS STEEL CUBER — COOLER.
SOLD THRU DEALERS ONLY
WRITE
United Frigurator Engrs.
MENOMINEE, MICH.
AVAILABLE IN SIZES 4 to 10 FT.

Information Center

For *more information* on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

Products Advertised
(list name, page, and issue date)

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What's New or Current Literature Available

Key No. . . . . Key No. . . . . .

Key No. . . . . Key No. . . . . .

Key No. . . . . Key No. . . . . .

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MAIL THIS FORM TO
AIR CONDITIONING & REFRIGERATION NEWS
Readers Service Dept.
450 W. FORT ST. DETROIT 26, MICHIGAN

For more information about products advertised on this page use Information Center, page 30.

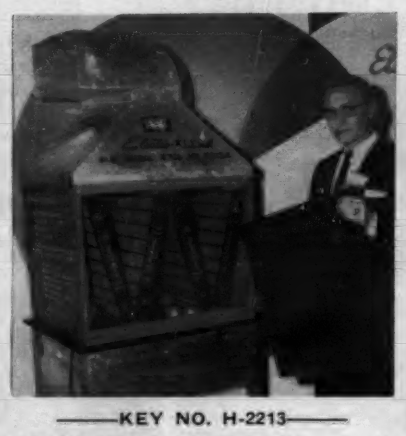
Home Builders See New Ways To Clean Air

——KEY NO. H-228——

COMFORT CONDITIONED HOME has Fiberglas insulated heating and air conditioning ducts and "Dust Stop" air filter, Eleanor Warner pointed out in the Owens-Corning Fiberglas Corp. booth.

——KEY NO. H-2212——

POINTING TO IONIZING element in "Lectric-aire" for cleaning and neutralizing all types of air pollution is R. R. Cook, president of Radex Corp. Unit has mechanical filter, activated carbon filter, and negative ionization element.



——KEY NO. H-2213——

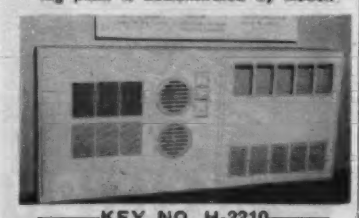
FIRST SHOWING FOR BUILDERS of American Air Filter Co.'s "Electro-Klean" electronic home air filter finds F. Robert Walker, sales manager, giving demonstrations of "the next major appliance."

——KEY NO. H-2214——

GENERAL ELECTRIC'S new Custom Thinline 1-hp. air conditioner, the company claims, offers the same capacity in 20% less space than other Thinline models.

——KEY NO. H-229——

HOW TRION electric air cleaner hooks up into home air conditioning and heating plant is demonstrated by model.



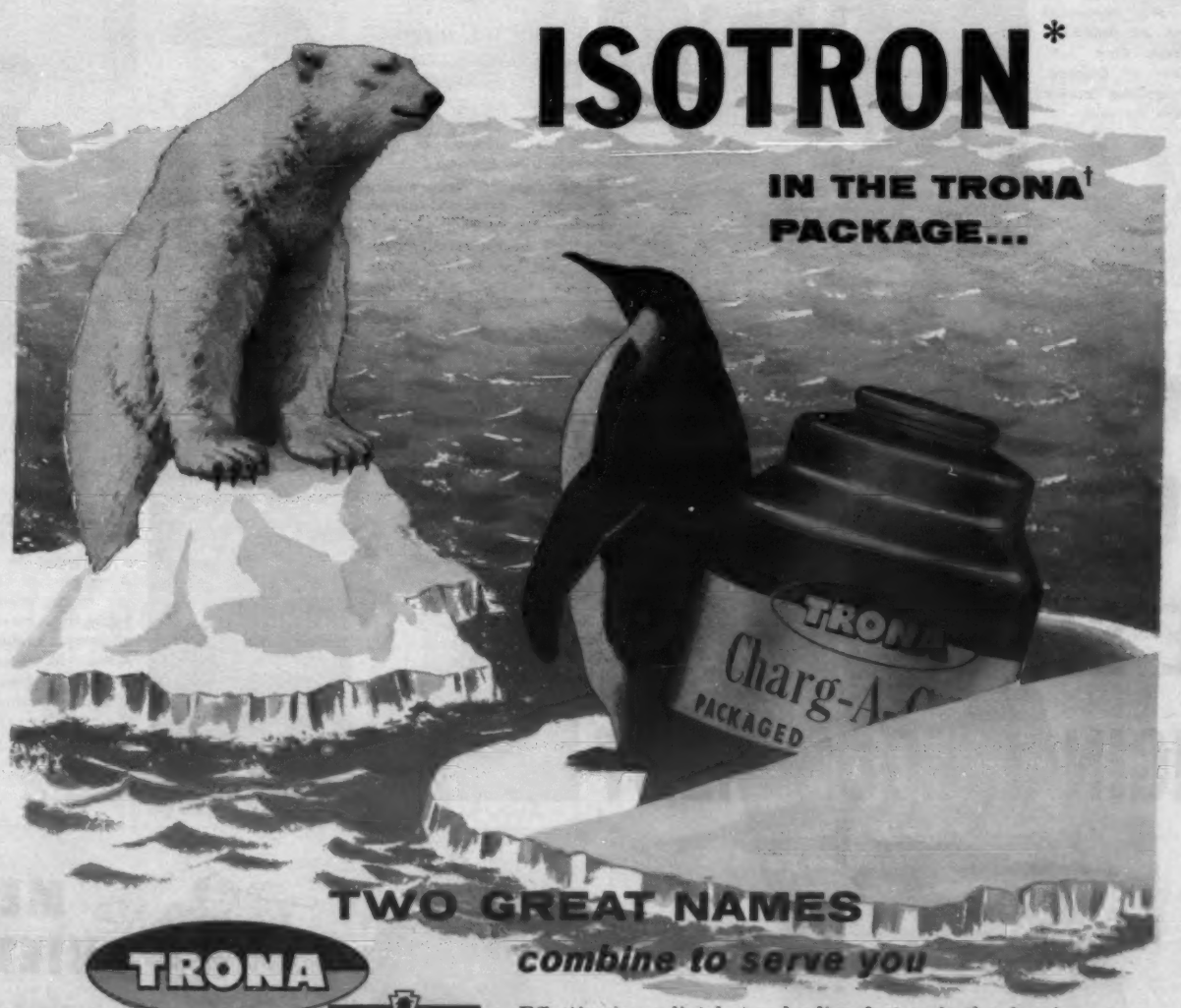
——KEY NO. H-2210——

WEATHER-TWINS, a Kelvinator air conditioner combined with an Embassy convection hot water or steam heater in a single cabinet, were displayed for the first time at the Kelvinator booth. Installation is through the wall. Weather-Twins will be merchandised through plumbing and heating wholesalers, Embassy Steel Products, Inc. said.

——KEY NO. H-2211——

THREE NEW ELECTRICAL HEATING UNITS for the home were exhibited by Robbins & Myers, Inc. Top left: forced air wall furnace. Top right: radiant convector heater for bathrooms. Bottom: gravity convection circulating wall furnace.

What's New in Refrigerants?



TWO GREAT NAMES *combine to serve you*

TRONA

Pennsalt Chemicals

Effective immediately two leading factors in the chemical world join forces to serve the refrigerant industry. American Potash & Chemical Corporation, a leading national refrigerant distributor for 20 years, and Pennsalt Chemicals Corporation unite to bring you ISOTRON refrigerants, newest of the fluorinated hydrocarbons in CHARG-A-CAN† disposable containers and bulk cylinders. First with the full line, first in constructive service for wholesalers, contractors and service men, TRONA continues its refrigerant marketing leadership.

*"ISOTRON" is Pennsalt's registered trademark for its fluorinated hydrocarbons.

†Trademark AP&CC

FIRST with the FULL LINE in disposable CHARG-A-CAN containers and bulk cylinders... ISOTRON-11, ISOTRON-12, ISOTRON-22, ISOTRON-113, ISOTRON-114, METHYL CHLORIDE and SULFUR DIOXIDE.

TRONA

For further information write

American Potash & Chemical Corporation

3030 West Sixth Street, Los Angeles 54, Calif. | 99 Park Avenue, New York 16, New York

Export Office: 99 Park Avenue, New York 16, New York

Builders See Heating-Cooling Centers

For additional details on these products shown at the National Association of Home Builders conclave in Chicago please use the "Information Center" blank on page 30—refer to product by Key Number. Additional pictures will appear in a future issue.

—KEY NO. H-2215—
CONDENSING UNIT, sleeve, and coil section are single sealed unit in Frigidaire's new year-round full-home air conditioner now in production, W. H. Winn (l.), Frigidaire's supervisor of residential sales, tells Donald MacDonald of the Owens-Corning Fiberglas Corp.

—KEY NO. H-2217—
CARRIER "THERMO-CENTER," with furnace installed against outside wall and condensing unit on opposite side, helps cut installation costs, says Richard Chapman, Carrier Corp. district representative.

—KEY NO. H-2216—
YORK HOME COMFORT CENTER heats, cools, and electronically filters the air, William Goldsmith, sales manager of residential heating and air conditioning for York Corp. tells Ami Silvester of Chicago. It is new on the market this year, he said.

—KEY NO. H-2218—
PIGGY BACK heating and cooling combination for through the wall installation, is demonstrated by A. D. O'Connell (r.) of General Electric Co., Home Heating and Cooling Div. product planning department for Ed Walz and E. F. Rothe of Research Products Corp., in Madison, Wis. Gas furnace is mounted atop a cooling unit for slab or crawl space applications.

—KEY NO. H-2219—
COLEMAN "POLAR-SOLAR PAK" for attic installations is explained by Alan Zimmerman (l.) of Coleman Co. to Fred Holmstrom, (c.) Bellingham, Mass. air conditioning contractor, and Arthur M. Andersen of Andersen Construction, Inc., South Braintree, Mass.

PRECISION

TUBING BY THE TON OR THE POUND . . .

Finest Precision quality at regular mill prices . . . to the precise temper for the job . . . ranging from .010" to 1.000" O.D. Available in copper, brass, aluminum, nickel and nickel alloys, Ni-Span "C", phosphor bronze and nickel silver. Precision quality has been proved by customer tests . . . meets and beats all specifications. Write for folder "Small Tubing For Industry" to Department 2, Precision Tube Co., North Wales, Pa.

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REMCO E-Z SEE LIQUID INDICATORS ARE STANDARD FOR ORIGINAL EQUIPMENT

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Remco hermetically sealed E-Z SEE Liquid Indicators are used by more than 60 manufacturers.

They are available in brass or cadmium plated steel with flare or sweat connections. Sweat connections are swivel so that they can be soft or silver soldered with no danger from heat.

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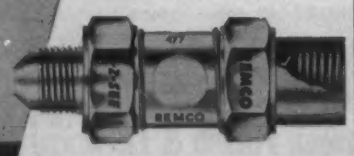
% STANDARD



REMCO INC.
ZELIENOPLE, PA.

AVAILABLE TO THE TRADE THRU WHOLESALERS EVERYWHERE

MEIER Nu-air QUIET PROPELLERS

Engineered for dependability and top performance . . . Known for QUALITY throughout the World

Whatever your product, if it involves movement of air, why not let one of MEIER's factory representatives tell—and show—you how MEIER can serve you better.

MEIER is responsible for many "firsts" in the fan blade industry. For instance, the **true airfoil blade section . . . rubber hubs . . . electrically reversible shaded pole motors . . . individually pitched spiders**, etc. All are MEIER "firsts."

Along with customers' individual problems, MEIER is conducting continuous study and research in tackling the 3 big problems of **increased air delivery . . . smaller blade sizes . . . more quiet and more efficient operation.** You might as well take advantage of their findings.

Meier Electric & Machine Company, Inc. offers you over 50 years of experience, plus the scientific and technical know-how and equipment necessary to provide you with the correct propeller for YOUR product. With this background of experience—coupled with continuous scientific research, modern production and technical facilities—we're in a wonderful position to serve both large and small manufacturers of products involving air movement.

MEIER ELECTRIC & MACHINE CO., INC.
3525 East Washington Street • Indianapolis 7, Indiana

Combination Heating and Cooling Units

——KEY NO. H-2220——

LENNOX "LANDMARK" heating and air conditioning system put together like building blocks is admired by Bob Shepard, Lennox Industries, Inc. division manager at Marshalltown, Iowa. Bottom block is blower filter, center furnace, top cooling coil.

——KEY NO. H-2223——

NEW MODEL HY-400 "Hydro-Vector" that offers a ½ ton of cooling as well as hydronic heating was exhibited by Hydrotherm, Inc. E. C. Jackson, sales engineer (l.), and W. F. Hosmer, general sales manager, demonstrate that the unit is not very heavy.

——KEY NO. H-2221——

GOLD FURNACE to celebrate General Motors' 50th anniversary, exhibited with cooling coil on top by Delco Appliance Div., gets thoughtful consideration by L. H. Jenkins of North Wilksboro, N. C. (r.) as Robert H. Brethen, Delco's Rochester (N.Y.) regional manager, tells him about it.

——KEY NO. H-2222——

GAS OPERATED "All-Year" air conditioner providing absorption cooling and heating was exhibited by Arkla Air Conditioning Corp. Posing with 3-ton unit are Bill Wepfer, Arkla sales manager (l.), and Russell Brown, his assistant.

SUBCOOLED LIQUID FEED AT CONSTANT PRESSURE AND SUCTION TEMPERATURE

For any refrigerant. Feed pressure adjustable.

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INCLUDES COMPRESSOR PROTECTION.

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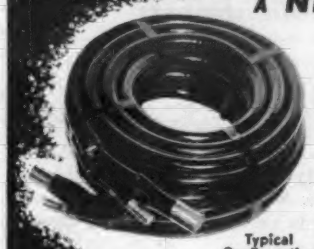

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with these advantages:

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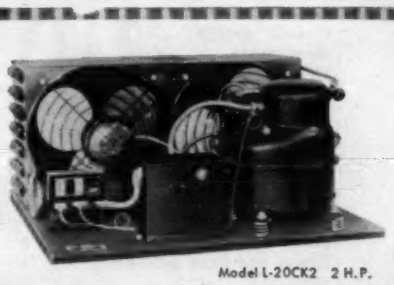
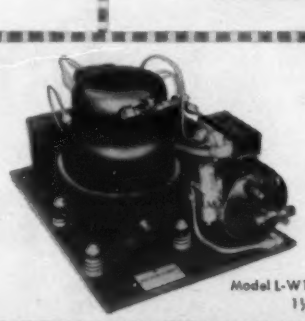
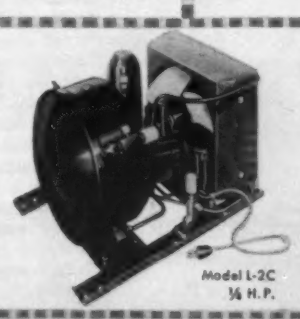


Model L-20CK2 2 H.P.



Model L-W15CK2 1½ H.P.



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for the **size** you need...
the **capacity** you want...
the **quality** you expect...

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Any size, from 1/5 to 2 H.P.
for any application, commercial or industrial.
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LEHIGH MANUFACTURING COMPANY, Division of Lehigh, Inc., Easton, Pa.
Manufacturers of Open Type and Hermetic Condensing Units and Compressors. EXPORT DEPT.: 13 East 40th Street, New York 16, N. Y.

1,971 Detroit Air Conditioning Sales In 1957 Top Every Year but 1956

Record 122 Contractors Install Units In Second-High 1,270 Establishments

Data on Detroit air conditioning installations for 1957 was obtained by AIR CONDITIONING & REFRIGERATION NEWS through a check of installation permits issued by the city's Department of Building and Safety Engineering as required on units of 1 hp. and over.

Figures apply only to the city of Detroit proper and do not include the suburbs. However, it is thought these figures probably represent about two-thirds or more of all metropolitan area jobs.

DETROIT—Permits for 1,971 air conditioning systems of 1 hp. and larger (other than room air conditioners) were issued by the city of Detroit for the full 12 months of 1957, a final survey of Detroit installations has revealed.

This over-all total, coming to almost the exact midway point between 1955 and 1956, makes 1957 second-best year in Detroit records for air conditioning installations. There were 2,449 installations in '56, 1,499 in '55, previous record high.

Most important factor in keeping air conditioning installations at a high level last year appears to be the continued rise in the sale of residential air conditioners. There were 348 units installed in 317 homes in 1957, just 65 more than the 252 homes air conditioned in the previous year which was the former all-time high. There were 139 such jobs in 1955 and only 17 homes air conditioned in 1954.

Lean to Smaller Units in Homes

More and more contractors seem inclined toward installation of two smaller units as zoned air conditioning in residences. There were many combinations of 1, or 1½, or 2-hp. units installed last year. The increasing number of under 3-hp. jobs would appear to bear this out. Apparently there are a number of split-systems being put into residences now.

Rather than a dip in number

(Continued on next page)

Where Air Conditioning Was Installed In Detroit In 1956 and 1957

Establishment	1956 No.	1956 Hp.	1957 No.	1957 Hp.
Abstract office	1	10	....	....
Advertising agency	11	123	3	23½
Airline ticket office	1	10	2	45
Airline office	2	32½	....	....
American Red Cross	....	....	1	5
Apartment house	10	68	2	55
Appliance store	4	25½	....	....
Architect's office	....	....	2	8
Armored car service	3	65	....	....
Army office	....	....	1	8
Art studio	....	....	1	5
Assembly hall	9	212	4	42½
Auditorium	1	235	2	63
Auto club	2	17	....	....
Auto rental office	1	5	....	....
Auto sales room	11	77½	7	50
Auto supply store	....	....	1	10
Bakery	7	67	9	42½
Bank	15	357½	27	417
Banquet room	3	27½	....	....
Barber shop	13	69½	8	23
Barber supply office	2	12½	....	....
Beauty school	1	12	....	....
Beauty shop	14	74½	25	110½
Beauty supply	....	....	1	3
Beer store	7	21	....	....
Belt company office	2	25	....	....
Benevolent society	4	77	....	....
Blood bank	....	....	1	3
Blue Cross office	....	....	1	15
Blueprint shop	1	12½	2	12
Board of education	1	15	....	....
Bookstore	3	13	....	....
Bowling alley	7	120	3	50
Boy's store	2	7½	....	....
Brass company office	1	32½	....	....
Brewery	2	45	1	3
Brick company office	3	15	....	....
Bridal shop	5	25	....	....
Building contractor	5	32½	1	10
Business organization	1	20	....	....
Cafeteria	5	65	....	....
Camera shop	4	12	....	....
Candy store	4	14	1	2
Carpet store	4	35	2	13
Caterer	2	17½	1	10
Cement company office	....	....	1	3
Cheese maker	1	15	....	....
Chemical company	1	25	....	....
Child's wear shop	1	7½	1	5
Church	11	266½	2	25
Cigar store	2	12	2	8
City of Detroit	....	....	1	15
Cleaners	....	....	1	3
Clinic	14	112½	16	105
Clothing store	12	115	1	5
Club	16	98	3	25
Coal company	2	10	1	3
Coffee shop	....	....	1	5
Commercial (unspecified)	254	1,768½	199	1,268
Confectionery	2	7	1	5
Conference room	3	27½	....	....
Construction company	2	15	1	30
Control room	1	10	....	....
Convent	1	12½	....	....
Credit union	1	17½	5	125
Dairy bar	4	12	1	5
Dairy office	6	62	....	....
Dance studio	7	45	....	....
Decorators	2	17½	....	....
Delicatessen	4	14	2	10
Dental laboratory	....	....	1	2
Dental office	8	27	2	5
Department store	11	165	3	60
Die casting company	6	65	....	....
Dime store	12	325	5	140
Doctor's office	32	177½	30	140½
Doughnut shop	4	20	2	25
Drafting room	3	18	....	....
Drapery shop	3	11	....	....
Dress shop	12	112½	11	96
Drug manufacturer	1	40	....	....
Drugstore	37	218	12	92½
Dry goods store	6	32½	5	74
Electric company	....	....	2	16½
Electrical store	....	....	3	11½
Employment office	....	....	1	40
Engineering office	5	42½	1	3
Factory office	43	625	6	74
Film studio	2	18	....	....
Fire station	1	12	....	....
First aid room	2	8	....	....
Florist	3	15	1	7½
Food wholesaler	3	25	2	10
Foundry	1	30	....	....
Funeral home	6	55	9	63½
Fur store	2	15	1	5
Furniture store	23	147½	8	140½
Garage	....	....	2	10½
Gas company	1	64	....	....
Gift shop	1	5	....	....

(Concluded on Page 36)

Introducing the DOVER

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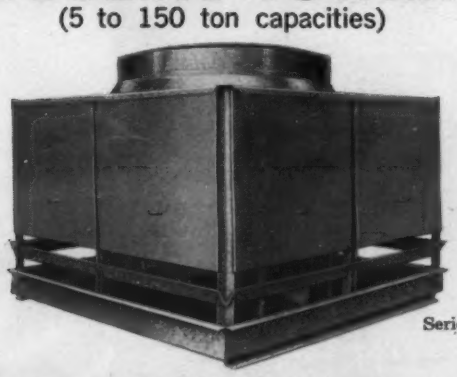
COOLING TOWER

(5 to 150 ton capacities)



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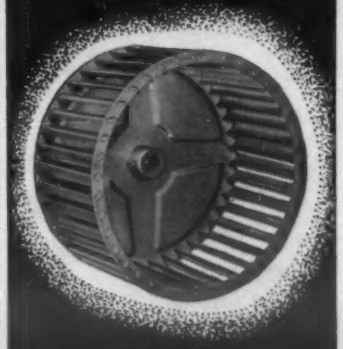
REVCOR BLASTAIRE BLOWER WHEELS



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For more information about products advertised on this page use Information Center, page 30.

Detroit Sales--

(Continued from preceding page)

of sales of under 3-hp. air conditioners, as had been the trend over the years immediately preceding 1956, smaller installations began to pick up then, and last year seemed to gather momentum.

There were only two "giant" jobs in Detroit last year, both coming near year-end. These elephantine installations totaled 900 and 600 hp. each. The combined 1,500 hp. helped lift total horsepower installed in this city in 1957 to third-highest of all-time here. Only 1956's 15,321 hp. from 2,449 installations and 1953's 13,581½ hp. on just 1,233 units topped 1957's 11,918 hp.

More Contractors Enter Field

Expansion of the air conditioning field seems evident from the fact that 122 different contractors installed jobs in the Motor City last year. Marking a record, this was a jump of 16 over the 106 of the preceding year and a booming rise of 33 over the 89 of 1955. There were a number of indications that men who had formerly confined their activities to heating have joined the swelling ranks of air conditioning contractors.

Information from the Detroit permits has been tabulated four ways: 1) sales by size for the years 1955 through 1957; 2) sales by make for 1957; 3) sales by contractor for 1957; and 4) where the installations were made in the last two years.

5-Hp. Units Lead With 567 Jobs

In the graph analyzing installations by size of unit for the years since 1955 indicates that the 5-hp. size continues to be the leader. The 567 such units represent about 28% of the 1,971 total jobs. Except for unusual 1956, the number of 5-hp. units seems to follow a pattern of about equal numbers for the last several years.

A close second to the 5-hp. size was 3 hp. with 534 installations. This exceeded the 518 such units sold in 1956 and follows the rising trend in this category. There were 401 units of under 3 hp. put in place last year which also tops the 356 of the preceding year. There are 316 jobs of 7½ hp.

Units of 10 hp. with 77 installations came right behind 1956's 81 and well above the 49 installed in '55 and 53 of '54. There were also 21 installations of 15-hp. units, just one less than 1956 and tied with '54, 17 of 20 hp., 11 of 25, five of 30, seven each of 40 and 50, five of 60, one 75, and one each 600 and 900 hp.

60 Different Makes Surpass 1956

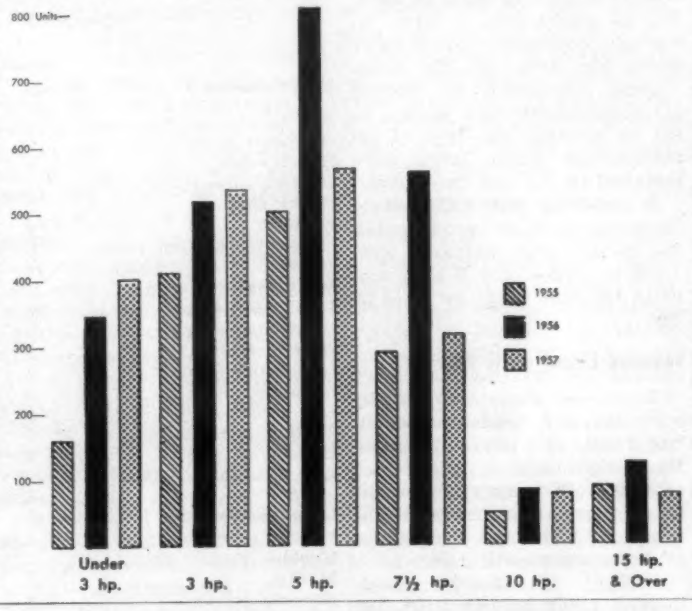
Listed in another table is a comparison of 1957 Detroit air conditioning installations by make. A total of 60 different makes are represented, nine more than 1956. This is a gain of 18 over the 42 listed in 1955 and obviously is the result of newcomers entering the air conditioning industry. The nine makes which may be considered newcomers in the field represent about 10% of the total and garnered 95 installations, or 4.8% of the 1,971 jobs. One is credited with 34 sales, evidently in the residential market.

At the top of the list is Make No. 1 with 258 installations and 1,568 hp. Make No. 2 follows with 212 units and 973½ hp. Tagging closely behind is Make No. 3 with 210 jobs amounting to a whopping 2,785 hp., biggest in the field. (This make would have been second-high with 1,285 hp. had it not been for the mammoth 900 and 600-hp. jobs.)

Not too far back is Make No. 4 with 179 installations and 864½ hp. Makes 5 and 6 have 175 and 166 units, respectively, and 873½ and 885 hp. Only other make to top the 100 mark was No. 7 with 105 and 293½ hp., seemingly most of them small units.

At the low end of the tabulations are 14 makes with only one unit each, four with just two, four with three, six with four, and two with five.

Detroit Installations by Unit Hp., 1955-56-57



Disregarding the two gigantic installations of one make, there is a fairly close correlation between the first six makes' number of units and horsepower. Although Make No. 3, even without its two huge jobs, is only two behind No. 2 in units, it is still over 1,200 hp. higher. Remaining three in the top five are bunched both ways.

In the middle range, however, fairly wide differences show up in comparing units with horsepower. As an example, Make No. 17 has 18 installations but 188½ hp., much higher than the preceding three makes with 19 units. Topping that is Make No. 23 with only 12 units but a zinging 191½ hp.

It is also interesting to note that the 1957 leader with 258 units is below 1955's 279 and

(Concluded on next page)

Airtemp dealers make more money

Why? Well, the simple fact is that Airtemp Dealers have more to sell. On the one hand, the Airtemp line is *complete*—really complete—with 297 cooling and heating models. A complete line that can satisfy *any* cooling or heating need.

And on the other hand, Chrysler Airtemp dealers make more money because—

- They sell the Chrysler name and Chrysler's famous engineering.
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- They benefit from pre-tested merchandising helps and incentive programs.
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- They get factory advertising in their local markets.

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Detroit Cooling--

(Concluded from preceding page)

far down from booming '56's four top makes with 440, 389, 361, and 310 units, respectively.

Top Man Installs 216 Units

Breakdown of installations according to contractor shows that, of the 122 different contractors, top man last year installed 216 units for 928 hp. He was second in the latter tabulation. Second contractor with 136 units just reversed the deal and led with 963 hp. (Again this doesn't take into account the one firm which had only two jobs, those giant 900 and 600 hp. ones.)

Leading contractor in 1956 put in 239 units which represented 1,651 hp. Head man last year was far in the van of '55's tops of 117 and also over the 157 of 1954.

Pattern of the top 10% of the contractors doing half the business runs true to form in 1957. Top 12 contractors, or 10%, installed a combined total of 1,071 units for 54% of the total.

Final tabulation of Detroit air conditioning data shows, as far as possible, the type of establishment where units were installed in the last two years.

It indicates that 1,270 establishments had air conditioning put in last year compared with 1,605 in 1956. Total of 1957 was little different from the 1,216 of '55.

Homes Lead with 317

Tops, as explained before, were the 317 residences which had a total of 1,195 hp. installed for fourth-high in the latter category. "Commercial" classification was second in establishments with 199 and also second in horsepower with 1,268.

"Office" classification bulldogged right behind with 185 and 1,482 hp. Latter figure was the year's leader. It should be pointed out that total number of offices air conditioned in 1957 was considerably higher than that single listing indicates. Wherever possible each particular type of office is specified if so stated on the permit.

Where Air Conditioning Was Installed In Detroit

(Concluded from Page 34)

Establishment	1956 No.	1956 Hp.	1957 No.	1957 Hp.
Hall	2	22	....	....
Hardware store	5	15	....	....
Health club	3	25	1	5
Heating sales room	....	....	2	10
Hobby shop	3	17½	1	7½
Hospital	9	146	5	1,224½
Hospital operating room	3	17½	....	....
Hotel	11	425	6	268
Insurance exchange	....	....	2	255½
Insurance office	16	85	13	74½
Investment office	16	118	5	25
Jewelry store	3	22½	4	37½
Laboratory	6	50	2	6
Laundry	2	15	1	3
Law office	5	25	....	....
Leather goods store	2	8	....	....
Library	1	20	....	....
Life insurance company office	4	30	....	....
Loan company	17	132½	11	130½
Lumber company	5	27½	....	....
Machine shop	....	....	2	8
Market	43	712	37	402½
Masonic temple	2	12	....	....
Mausoleum	1	10	....	....
Meat market	3	11	....	....
Meeting room	....	....	1	5
Men's shop	6	82	8	42½
Millinery shop	2	10	....	....
Motel	2	15	7	202
Music store	1	5	4	43
Newspaper office	2	25	1	33
Night club	....	....	1	31
Nursery	2	23	....	....
Office	109	1,172½	185	1,482
Oil company office	....	....	3	83
Old folks home	....	....	1	50
Optician	....	....	1	12½
Paint store	....	....	8	64
Paper company office	3	20	....	....
Pattern company	3	32	....	....
Pawnshop	....	....	2	8
Pharmaceutical house	1	50	....	....
Pharmacy	3	13	2	10
Photo laboratory	5	28	2	4
Photo supply	....	....	1	3
Plant	....	....	5	72½
Plumber's	1	5	....	....
Pool room	1	5	....	....
Post office	1	55	....	....
Printer	9	85	2	50½
Public building	6	275	....	....
Radio repair shop	1	2	....	....
Radio studio	4	255	....	....
Realtors	5	20	6	24
Record shop	....	....	2	6
Recreation room	1	5	....	....
Reducing salon	1	7½	....	....
Residence	252	924½	317	1,195
Restaurant	94	896	66	463
Ribbon company	....	....	1	3
Sales room	....	....	11	65
Salt company office	2	15	....	....
School	1	8	....	....
Service organization	8	122½	....	....
Shoe store	8	36	4	20½
Showroom	9	52	....	....
Sign company	2	7	1	5
Stamp company	4	42	....	....
Stamping company	2	15	....	....
Stationers	....	....	1	5
Steel company	8	35	4	127
Storage	2	18	....	....
Store	18	284	11	50
Storm window sales	1	10	....	....
Studio	....	....	1	5
Synagogue	....	....	1	80
Tavern (bar)	60	445	34	211
Telegraph office	....	....	3	73
Telephone office	1	55	11	383
Telephone answering service	1	5	....	....
Television school	1	35	....	....
Testing laboratory	....	....	1	3
Theater	8	685	1	7½
Tile company	3	15	....	....
Tire store	....	....	1	3
Tool company	8	72½	2	35
Toy shop	....	....	1	5
Trucking company office	5	35	1	5
Typesetting shop	1	35	....	....
Union hall	4	38	4	102½
Union office	8	68	2	615
University	1	75	1	2
Variety shop	....	....	1	7½
Veterans organization	2	17½	1	5
Waffle shop	....	....	1	5
Warehouse	....	....	1	5
Welding company	....	....	1	18
Wholesaler	....	....	2	26½
Yacht club	8	65	....	....
Yarn shop	1	10	1	3
YMCA	1	15	1	15
Total	**1,605**	**15,321**	**1,270**	**11,918**

How Makes Compare In 1957 Detroit Sales

Make	No. Units	Hp.
1	258	1,568
2	212	973½
3	210	2,785
4	179	846½
5	175	873½
6	166	885
7	105	293½
8	96	157
9	79	993
10	67	248
11	37	110
12	35	135
13	24	97
14	19	136
15	19	73
16	19	70
17	18	188½
18	16	75½
19	15	49½
20	14	58
21	13	185½
22	13	100½
23	12	191½
24	12	46
25	11	90
26	11	68
27	11	42½
28	8	36
29	8	32½
30	7	49½
31	5	21
32	5	14
33	4	60½
34	4	12
35	4	9
36	4	7
37	4	13
38	4	20½
39	3	15
40	3	12
41	3	16
42	3	38
43	2	45
44	2	55
45	2	6
46	2	2
47	1	50
48	1	10
49	1	7½
50	1	7½
51	1	15
52	1	5
53	1	5½
54	1	3
55	1	3
56	1	5
57	1	2
58	1	2
59	1	5
60	1	3
Total	**1,971**	**11,918**

How 122 Contractors Shared Installations

Contractor	No. Units	Hp.
1	216	928
2	143	996½
3	120	590
4	90	327
5	81	327
6	74	237
7	67	398
8	67	149½
9	57	678
10	55	236
11	54	208½
12	47	227½
13	45	365
14	39	373
15	37	218½
16	37	140½
17	37	46
18	36	182½
19	34	132
20	32	147
21	31	439½
22	26	172½
23	23	92
24	23	56½
25	22	115½
26	22	108
27	22	65
28	21	89½
29	19	80½
30	18	194
31	18	106½
32	17	79½
33	16	53
34	15	44
35	14	119½
36	13	54½
37	13	43½
38	12	61
39	11	101½
40	11	48
41	11	43½
42	9	53½
43	9	36
44	8	34
45	7	50
46	7	30½
47	7	22
48	6	65
49	6	30½
50	6	30
51	6	28
52	6	21
53-59	7 at 5 for	134
60-66	7 at 4 for	124½
67-72	6 at 3 for	98½
73-90	18 at 2 for	1,733
91-122	32 at 1 for	353½
Total	**1,971**	**11,918**

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For more information about products advertised on this page use Information Center, page 30.

Winter Air Conditioning Fundamentals

Reducing Mechanical Noises Associated with Blower Use

By H. C. Gurney, Janitrol Div., Surface Combustion Corp.

The blower assembly in forced air systems normally goes on for thousands of hours of service without the customer aware of its existence. If, for some reason, this assembly ceases to operate efficiently and quietly, the results are immediately apparent to even the most casual owner, and you can be sure your serviceman will get a fast call. Fortunately, the maintenance and adjustment of the blower assembly is easily accomplished.

AIR VOLUMES IN HEATING, COOLING

Some distinction must be made between equipment used for heating and equipment used for cooling, since the volumes of air to perform the separate operations are quite different. Cooling systems require greater air volumes, and generally, ductwork and grille discharge velocities are considerably higher.

When the heating unit is set-up on Continuous Air Circulation, for the most comfortable heating, *air* noise problems are practically eliminated. This is due to the also continuous movement of smaller amounts of air.

This lack of air noise, however, means that the mechanical noises associated with the blower operation must also be reduced to a minimum. This can best be accomplished by making the following adjustments.

MAKE ADJUSTMENTS

1. End play in blower shafts should be eliminated by adjusting the bearing thrust collars snugly against the bearing holders.

2. Blower and motor pulleys should be aligned so that the V-belt between them runs in a true plane.

3. V-belt tension should be such that the belt can be depressed about one inch below its running plane. Tight V-belts create mechanical noises, or tend to increase minor noises present, and cause undue wear on bearings and belts.

Inspection of bearings, alleged to be defective, reveals a large percentage have been operated under high belt tension and lack of lubrication. This is indicated by the bearing metal failing in that portion of the bearing in line with the motor.

Other causes creating customer complaints regarding noise and which require the attention of installation and servicemen are as follows:

(a) V-belts that have small imperfections, due to small raised sections which might be caused in the vulcanizing of the splice, or swelling caused by oil deterioration, will create noise and should be replaced.

(b) Loose set screws which position blower wheels and pulleys on shafts require inspection, and set screws should always be drawn down on the flats of the shafts involved, when flats are available.

(c) Blower wheels and pulleys which have not been positioned to provide clearance from adjoining surfaces require examination to guard against possible rubbing noises.

Blower and motor bearings should be lubricated on fairly regular schedule. Generally the use of a good grade motor oil of No. 20 weight is adequate.

Direct drive blowers (blower wheel attached to motor shaft) do not require the same adjustments as outlined above.

The speed of the blower is usually controlled through a speed controller, so that air requirements and allied air system noises are under the control of the speed controller.

DEVELOP 'TICK'

Occasionally the direct drive blowers will develop a noise best described as a "tick." This condition is created by the turning wheel, lagging the motor shaft at start up, which loosens the wheel hub on the motor shaft. To eliminate this type of noise it is only necessary to slightly tighten the holddown device at the hub of the blower.

Another item which should be checked is the direction of rotation of the blower wheel. Make sure it's correct.

Generally on the types of blowers encountered on residential equipment, the blower wheels are positioned in the blower housing, so that the concave face of the blades face the discharge of the blower.

Motor manufacturers report that over-oiling as well as under-oiling can cause motor failure.

Installation and service personnel should acquaint themselves with the oiling requirements of individual lines of equipment.

Lubrication is less of a problem in some newer models which have blower bearings made of powdered metal surrounded by a reservoir of special lubricant which lasts for a minimum of five years under normal conditions.

To the foregoing maintenance of blowers and motors must be added the precaution that wheels and motors should be kept free of lint, dust, and dirt which might accumulate during years of service.

LARKIN CEILING HUMI-TEMP

Price is only one factor in the selection of any product—especially one that has so important a task as protecting valuable perishables. Performance must come first. Quality cannot be overlooked. Durability is highly important. Larkin has all of these. And Larkin has low prices, too. Compare them and see for yourself how low they are.

For the latest Larkin price list, see your wholesaler. If you wish, write direct to us. We shall be glad to send you one.

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Manufacturers of the original Cross-Fin Coil • Humi-Temp Units • Frost-O-Trol Hot Gas Defroster • Air Cooled and Evaporative Condensers • Cooling Towers • Air Conditioning Units and Coils • Direct Expansion Water Coolers • Heat Exchangers

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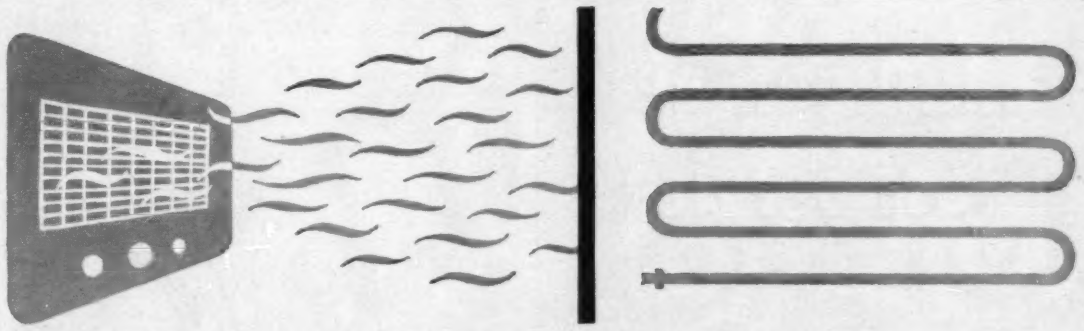

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As you can see, Chevy's a honey of a truck this year, and that handsome, broad-shouldered '58 appearance only hints at the host of new and improved features that are ready to put you dollars ahead in the years to come. *Here's a truck ideally suited for your line of work.* In styling, for instance, Chevrolet for '58 has what it takes to build your business prestige every day in the week: new dual headlamps, new massive grille, newly contoured hood and fenders, new cab beauty, to mention just a few innovations.

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There are many such reasons why Chevy's never been *so right* for your work—many more reasons why you'll want to see your Chevrolet dealer soon! . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

CHEVROLET

NEW CHEVROLET TASK·FORCE 58 TRUCKS

For more information about products advertised on this page use Information Center, page 30.

TECHNICAL CENTER

By Frank J. Versagi, Technical Editor

Used Driers (1)

Every drier manufacturer has received "defective" driers from the field, and it would be difficult to find a serviceman who has not had difficulty with a drier which he suspected was due to a manufacturing defect.

Yet, it would be safe to say that the overwhelming number of returned driers were removed from the line as defective when they had only done the job they were designed to do. Two drier manufacturers have stated that, in their own experience, 95% of the driers returned to them are not defective in the manufacturing sense.

One major reason that servicemen return driers is because of excessive pressure drop; and the average serviceman always diagnoses the trouble as "a plugged-up drier due to the desiccant powdering up and clogging the filtering elements."

More often than not, the drier's filtering element is clogged, but not with powdered desiccant. Rather the filters have done the job of removing from the recirculating refrigerant all of the sludges, solids, and foreign matter which reached them.

The fact is that a good drier-filter serves a very useful purifying purpose in a refrigerating system, for it actually removes most of the substances which might tend to harm the unit if they were allowed to recirculate indefinitely. More than one authority has suggested that a drier should be used on the line, even if water didn't exist.

FEW DRIERS HAVE MANUFACTURING DEFECTS

Now this is not to say that driers are never defective as they come from the manufacturer. For example, there is the case of one manufacturer who sent out a series of driers only to find that the granular desiccant in them flowed right out when the end caps were removed.

Investigation showed that the retaining screens had been attacked by strong acid. It took only a little more investigation to determine that during one particular period of time, the end caps had not been fully secured and when the driers were sent through their final cleaning operations, which included hot and cold dips, the acid had seeped into the driers where it later destroyed the screen.

Another manufacturing company, producing driers for a large refrigerator producer received a batch of rejected driers which the customer claimed were defective. According to the customer, the copper tubes which were brazed into the ends of the drier were too long and had pierced the inner screen.

Externally the driers looked perfect, and it took several dozen x-ray photographs which the customer had taken to convince the drier producer that the driers were in fact defective.

But such cases as these are rare. The serviceman would win a lot more than he lost if he bet that every drier he removed from a system because of pressure drop was plugged because of foreign matter and not because of defective manufacture.

The serviceman can convince himself of this in short order merely by cutting open and examining the next few such driers he removes.

SHOULD SERVICEMAN INSPECT USED DRIERS?

In this regard a couple drier manufacturers feel the serviceman can inexpensively equip himself to run a few simple tests on the contents of used driers. In this way, he can learn to determine what is going on inside a unit by identifying the foreign substances present in the drier.

Other companies feel strongly that such analysis requires an experienced chemist and that the serviceman should submit the driers to the manufacturer. It is the contention of these latter companies that to do a good job the serviceman would need a small laboratory; anything less than such a laboratory would not allow tests accurate enough and specific enough to be valuable.

Those companies who hold that the serviceman could do his own simple checking point out that if the unit is in serious trouble, the simplified tests will quickly point this out. If the unit has only so little foreign contamination that the simple tests give dubious results, there is nothing that needs immediate correction anyway.

To give a specific example, if a very simple test for iron shows a great amount of iron or rust in the drier, something is amiss and the system should be checked for air and moisture leaks. If the simple test for iron gives a reaction that is doubtful (for example, a very slight pink, rather than a good deep red), then the serviceman has no need to be concerned whether the pink is caused by impure chemicals or by a very small amount of iron.

(To Be Continued)

Apprentice Program Set For Antelope Valley

ANTELOPE VALLEY, Calif. —Antelope Valley Sheet Metal Contractors and Sheet Metal Local 152 have formed a joint apprenticeship committee to train competent journeymen.

There were 15 active apprentices at the first meeting. Mr. Hill has been active in starting the apprenticeship program and was elected JAC chairman. Wayne Moore was elected secretary. Ben Holland is the related class instructor.

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"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

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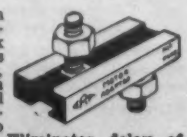

Keep them in stock. Servicemen will pick up adapters and motors, carry them in their cars, and complete service on the job in one call. Eliminates delay of having motors away for rebuilding. Adapters are easy to install, fit any base. No motor shaft too long or too short. They also bring you more sales in motors, belts, pulleys, controls, etc.

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Refrigeration Problems
And Their Solution
(*As Written by Paul Reed*)

The late Paul Reed, one of the refrigeration industry's most respected writers and teachers, wrote a column on "Refrigeration Problems and Their Solution" which was published regularly in AIR CONDITIONING & REFRIGERATION NEWS for more than 15 years.

Readers throughout the years have hailed this written material as some of the most practical and helpful that has ever been published. Fortunately, the author had an opportunity to revise some of this material and the NEWS is currently re-publishing it.

Liquid Head In a Tall Building

QUESTION:

It is the desire of a local company, which is just completing the erection of a 10-story building, to place a 100-ton condensing unit in the basement and run risers from the ground to the top story, having an air conditioning coil mounted in the air duct on each floor, total rise, 90 ft.

We fear that excessive head pressure will be necessary to lift the refrigerant this height, and that further, with reduction of pressure as it rises, that vaporization will take place, at least on the upper floors, and that poor results will be obtained.

It seems impossible to mount the compressor in any location but the basement. Up to this point, we have suggested as an alternative, the use of chilled water. Your opinions and suggestions would certainly be appreciated.

ANSWER:

You are quite correct in your analysis. It would require excessive condensing pressures in order to get the Refrigerant-12 (assuming that it is the refrigerant considered) to the top floor. Moreover, it would be difficult to avoid excessive flash gas.

Liquid Refrigerant-12 at 75° F., weighs approximately 82 p.c.f., so for every foot of rise in the liquid line, there would be a pressure drop of .57 p.s.i. (82÷144). In the 90-ft. rise, the pressure drop due to the weight of the liquid would amount to 51.3 p.s.i. To this would be added the pressure drop due to the frictional effect of the liquid line piping and fittings, so there would be a total pressure drop to the top story of perhaps 60 p.s.i.

Using a larger size pipe for the liquid line would reduce the frictional pressure drop. This is a comparatively small part of the total pressure drop, however, so a reduction of the friction head would have little effect on the total pressure drop.

If the normal condensing pressure were 110 p.s.i., and the pressure drop to the top story 60 p.s.i., the pressure of the liquid at the top story would only be 50 p.s.i.

Direct expansion evaporators for air conditioning (with Refrigerant-12) are usually run at about 40 p.s.i., corresponding to an evaporator temperature of 44° F. This would leave only 10 p.s.i. across the valve. The capacity of the expansion valve at that pressure difference would be but a fraction of its normal capacity.

INCREASING CONDENSING PRESSURE TO OFFSET LIQUID HEAD

To get liquid Refrigerant-12 to the top story, despite the liquid head, would mean reducing the water flow through the condenser, so as to build up the condensing pressure at least 50 p.s.i. above normal, if you were willing to accept a pressure drop of 10 p.s.i., and even this is double the 5 p.s.i. pressure drop through the liquid line, that in good practice, is considered about maximum.

It is a reasonably accurate rule-of-thumb for Refrigerant-12 that a 5-lb. increase in condensing pressure results in a loss of capacity of the condensing unit of about 2%. A 50 p.s.i. increase in condensing pressure would therefore mean a 20% reduction of capacity of the condensing unit from 100 tons to about 80 tons.

If the load requires 100 tons of refrigeration, the 100-ton unit would fall far short of capacity and a unit of about 125 tons would have to be used instead, at, of course, a considerable increase in first cost and interest on investment. Also the power costs would be a great deal higher for a larger unit operating at lower efficiency.

RECIRCULATING THE LIQUID

Liquid refrigerant circulating systems have been used, wherein the liquid line is a complete circuit, with the liquid refrigerant circulated by a liquid circulating pump. Taps are taken off from this line for the various expansion valves. With this method condensing pressure remains normal but flash gas is not reduced; however, this method involves considerable additional initial cost and operating expense.

BY-PASSING FLASH GAS

As the pressure drop becomes progressively greater with the increased height of the liquid line, the amount of flash gas in the liquid line on the upper floors would be so great that the sizes of the line and expansion valves would be out of all reason, and steps would have to be taken to relieve the flash gas.

This can be done as is described in Chapter 11 of the Manual J-1 under the title "Flash Gas."

This method involves the use of an auxiliary liquid chamber, electric float valve and electric solenoid valve, all in a by-pass line from the liquid line to the suction line. As flash gas forms in the auxiliary chamber its pressure on the liquid increases, and this lowers the level of liquid in the auxiliary chamber.

The electric float switch closes at a predetermined minimum liquid level, and turns on the current to the solenoid valve, which opens and allows the flash gas to purge through the by-pass line into the suction line. Relieving the flash gas pressure in the chamber allows the liquid level in the chamber to rise and maintain a solid liquid refrigerant to the expansion valve.

This method of relieving flash gas requires a considerable increase in the suction line size to accommodate the flash gas as well as the normal vapor from the evaporator.

Preferably, one set of these flash gas by-pass arrangements would be installed on each floor, although one for every other floor would probably suffice.

SUB-COOLING THE LIQUID

Flash gas can be prevented by sub-cooling the liquid to a temperature corresponding to the reduced pressure of the liquid at the top floor. In our example, the liquid would start at a pressure of say, 150 p.s.i. at the bottom and with a 50-lb. pressure drop would arrive at the expansion valve on the top floor at 100 p.s.i.

The condensing temperature corresponding to 150 p.s.i.g. is 117° F., and corresponding to 100 p.s.i.g. is 90° F. If the liquid is sub-cooled so that it arrives at the top story at 90° F., no flash gas would form in the liquid line.

Sub-cooling the liquid can be done by one or more auxiliary evaporators. Some sub-cooling can be done by heat exchangers.

CHILLED WATER SYSTEM RECOMMENDED

Probably the chilled water system would be much more satisfactory for this building than direct expansion. It is true that there are some heat losses, and the initial cost of the cold water piping and insulation is greater than for a normal direct expansion system. Since the only possible location for the condensing unit in the building is in the basement, there should be little hesitancy in choosing the circulating chilled water system.

Moreover, the chilled water system may give better flexibility to the installation, especially in load differences between rooms, and in zoning for better temperature control. Despite the higher initial cost, chilled water systems are becoming increasingly popular even in one or two story buildings in which the liquid head is no problem, because of these advantages.

Packless Modernizes, Adds Production Space

MOUNT VERNON, N. Y.—Murry Johnson of Packless Metal Hose, Inc., manufacturer of flexible metal hose, has announced the accomplishment of a complete modernization of production facilities at the Packless plant here.

Improvements will result in immediate deliveries and far greater production capacity, it was stated.

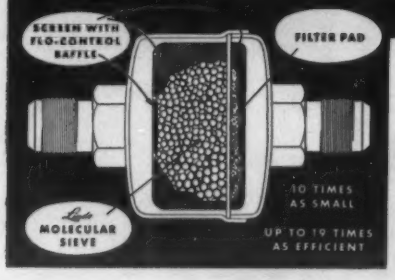
Manually operated equipment has been replaced by the latest automatic and semi-automatic machinery wherever possible, and all production processes have been studied and improved to provide for the assembling of redesigned hoses, braids, and fittings which have been under development by Packless for the past two years, according to Johnson.

To Present 'Look' Awards at Wiring Conclave Feb. 20-21

DETROIT — Presentation of trophies and plaques to winners in the fourth annual *Look* Award competition for outstanding performance in residential wiring sales and promotional activity will be a highlight of the 14th annual National Wiring Sales Conference at the Statler-Hilton hotel here Feb. 20-21.

Awards will be made to two utilities, one electrical contractor, and one electrical distributor.

FILTER-DRIERS
WITH *Linde* MOLECULAR SIEVE



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AND HERE'S WHY...One after another, men who design, manufacture, install and service refrigeration and air-conditioning are adopting TMC Filter-Driers.

Superior to all other driers in *Filtration, Moisture Removal, Acid Removal,* and *Pressure Drop.* Proved by leading laboratories and used by foremost manufacturers as original equipment.

Only 4 sizes handle up to 15 ton systems...inventory space and investment is reduced for manufacturers, wholesalers, installation, and service men.

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Add a "*King Zeero*" ICE BANK to Your Refrigerating System for Effectual, Economical Air Conditioning

The "King Zeero" ICE BANK is designed to deliver 32° to 34°F. ice water for recirculation through air cooling coils in exactly the right amount when and where it is needed. It levels off "peak" and "valley" loads. Peak loads many times compressor capacity are easily handled. Ice Banks may be added to increase existing capacity. Refrigerant: Freon, Methyl Chloride or Ammonia.

MODEL A-7 "KING ZEERO" ICE BANK

The Patented Coils with Built-in Louvres opposed to the flow of water through the ICE BANK provide turbulence. This eliminates a mechanical agitator - insures all the water rubbing all of the ice. No upkeep or repair expense whatever.

The "King Zeero" Ice Storage System of water chilling has definite advantages over direct expansion, or other types of ice accumulators.

Saves power through smaller compressor requirement. Simple construction (no moving parts). Dependable in performance. Low operating and costs.

Let the ice stored during light loads take care of peak loads. The compressor need only handle the average daily load - not the peak.

CAPACITIES - 500 lbs. to 30,000 lbs. (72,000 B.T.U.'s to 4,320,000 B.T.U.'s) in a single unit. Multiple units may be installed.

THE KING ZEERO COMPANY
4300-14 W. Montrose Ave. - Chicago 41, Ill.
Manufacturers of Ice Builders - Ice Builder Cabinets - Ice Banks

For more information about products advertised on this page use Information Center, page 30.

Western Show Conference Program--

(Concluded from Page 1, Col. 2)

tems, and the architect's view on the subject.

2. Symposium on codes and standards, covering views of the government, the engineer, the contractor, industry, and the owner.

3. Symposium on air cleaning, with a panel of our discussing informally efficiency with respect to particle size, "The Truth About Filter Testing," smog removal.

Air Conditioning Existing Buildings

4. Symposium on air conditioning existing buildings, with panel members representing owners, engineers, structural, contractor, architect.

5. General technical session including subjects of major interest such as—high temperature hot water, water conservation, air conditioning existing residences, residential heat pumps, "The Last Seven Degrees," low temperature design techniques, large absorption systems.

According to Fred J. Tabery, exhibit manager, reservations for exhibit space already exceed the total space in the 1957 show.

Information on the exhibit and conference program may be obtained from Tabery at 3443 S. Hill St., Los Angeles 7, Calif.

Tabery also reported that a concentrated show promotion and publicity campaign is in full swing. In addition, items have been prepared for exhibitor use to further create interest in and attendance at the event. These include lapel stickers and mailing labels.

'Wear Lapel Badges'

It is suggested that exhibitors' sales representatives wear the lapel badges during the week of Feb. 10 on all of their calls as an attention getter and to provoke inquiries about the show from customers and prospects.

Tabery indicated that exhibitors are entitled to up to 1,000 mailing stickers for each 10 by 10 booth unit reserved. Invitation folders will be available.

Fixture Life--

(Concluded from Page 1, Col. 2)

made the following major proposals:

Suggestions for Bulletin 'F'

1. The new Bulletin "F" should include both an average composite useful-life rate and separate figures on useful life for major classifications of depreciable assets. Taxpayers should have their choice of which of the two schedules to use as a guide.

2. A list of 20 classifications compiled by SMI comprises a reasonably complete list of major types of depreciable supermarket assets. It includes refrigerated display fixtures, compressors, and walk-in coolers separate categories. Air conditioning is not mentioned specifically.

Bulletin "F" should provide that miscellaneous supermarket fixtures not specifically dealt with elsewhere in Bulletin "F" may be depreciated at the average composite life for supermarket fixtures and equipment.

'Should Recognize These Things'

3. The new edition of Bulletin "F" should recognize that:

a. Supermarkets are a distinct and major new development in retailing.

b. Supermarket equipment is characterized by a rapid rate of obsolescence brought about by technological developments.

c. Supermarket equipment has very little salvage value.

d. Mechanical equipment wears out faster than the equipment of old-style food stores. . . .

The report also recommended that Bulletin "F" be reviewed regularly and frequently so as to keep up with technological improvements, economic changes, and changes in operating conditions.

SMI reiterated that Bulletin "F" should never be regarded as more than a guide—the taxpayer should always retain the right to prove that the nature of his particular business and experience warrants other useful life figures than those recommended.

The recommendations were based on two surveys made among the membership.

AFL-CIO Pact--

(Concluded from Page 1, Col. 3)

building trades. Optimism that the agreement will bring new unity to the AFL-CIO was voiced by spokesmen for the two divisions.

In another development, heads of the 19 building trades unions of the AFL-CIO agreed to stop work practices, such as featherbedding, early quitting time, and unnecessary absenteeism, that have contributed to higher building costs.

John F. O'Connell, chairman of a construction association committee that investigated the work-practices matter, explained that an accord had been reached in principle. He said that the exact language spelling out the practices to be ended would be worked out by union and building trades officials.

O'Connell predicted that the agreement would stimulate construction of all types.

Farr Names Thruelsen In Sales

LOS ANGELES — Farr Co., manufacturer of air filtration equipment, has announced the appointment of Gordon F. Thruelsen as general sales manager.

Thruelsen formerly was general manager of Dust Control, Inc., a Farr Co. subsidiary.

He will be in charge of all marketing operations for the commercial/industrial, railroad, and electronic sales divisions.

Name Shawhan--

(Concluded from Page 1, Col. 4)

since 1929, Shawhan has been assistant to the president since 1955. He was graduated from the University of Kentucky in 1927 where he became assistant professor prior to joining Carrier Corp. as a research engineer.

His career with Carrier included important work on the early self-contained or "packaged" air conditioning units. Later he directed development of residential combination heating and cooling equipment. In 1953 he became assistant general manager of the Unitary Equipment Div.

Strike Settlement--

(Concluded from Page 1, Col. 2)

neymen training program and apprentice training and for health and welfare; and wage increases to bring scale in line with construction industry increases.

The contract also provides: Foreman 10% above journeyman scale instead of previous differential of 25 cents more an hour; general foreman 20% above journeyman scale; differential in effect past two years continued for service work, $1.00 a day, or 12½ cents an hour less; eliminated previous stand-by arrangement under which each contractor had been able to have one man perform his 40-hour week Tuesday to Saturday.

ALMOST AS FLEXIBLE AS A RUBBER BAND

New ROTALOCK VALVES by Primore

Rotalock is a new type detachable valve which allows the refrigeration manufacturer to provide an easy, economical method of meeting individual customer's valve requirements.

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- Greater Production Flexibility
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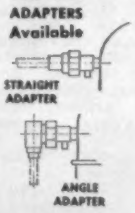
Shipping caps may be ordered so manufacturer can ship equipment minus the valves, thus customer can purchase valves from Primore direct.

ANGLE and STRAIGHT ADAPTERS Available



Primore Sales, inc.
2460 S. Main Street • Adrian, Michigan

REFRIGERATION designing sales engineering

Now check superheat
EASIER...FASTER...BETTER

Now comes a revolutionary development in superheat testing. The kit illustrated here gives you the easier, faster, and above all the *more accurate* superheat readings you need for that all-important adjusting and setting of the expansion valve.

All the difficulties of testing with glass tube thermometers—positioning, reading, costly breakage—are wiped out. The small bulbs of these distant reading *dial* thermometers are easily attached exactly where they should be. The distant reading feature permits placing the dials where they can be readily seen and compared. The widely spaced *one*-degree markings in the testing zone assure far more accurate reading than is possible with the closely-spaced markings of glass tube thermometers.

Note the many features described opposite—particularly the method of insulating against ambient temperature . . . which assures more accurate readings . . . better results.

At their moderate price you can own these long-lived "Super-heat" Thermometers at a fraction of the cost of using the breakable, short-lived kind!

Write for facts or See Your Wholesaler

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Dept. B, Skokie, Ill.
Marsh Instrument & Valve Co. (Canada) Ltd., 8407 103rd Street, Edmonton Alberta • Export Dept., 3301 Howard St., Skokie, Ill.

MARSH Refrigeration Instruments

The "Super-heat" testing kit contains two identical, 2-inch dial-size thermometers (one for evaporator inlet and one for outlet) in attractive, highly polished brass cases. Dials are graduated −40° to +65° F. Widely spaced *one*-degree calibrations in testing zone are *guaranteed* accurate within *one* marking plus or minus. (Glass tube thermometers have crowded markings.) Each thermometer has a 12-inch capillary tubing. Bulbs are small for use in tight quarters. Kit contains two non-absorbent insulating wrappers for easy attachment of bulbs to evaporator tubing . . . also to insulate bulbs from ambient temperature. (Field studies have shown that for the highly accurate readings essential to superheat testing, ambient temperature must be insulated from thermometer bulbs.)

Thermometers and "wrappers" are neatly held in durable, transparent plastic box with convenient hinged cover, measures only 3" x 8" x 1¼".

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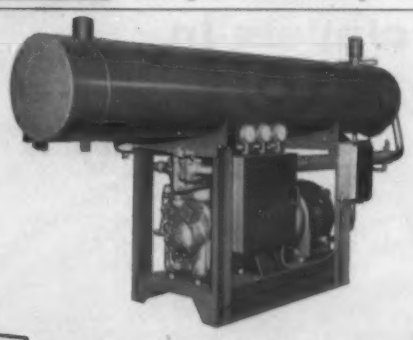

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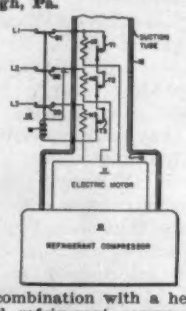
PATENTS

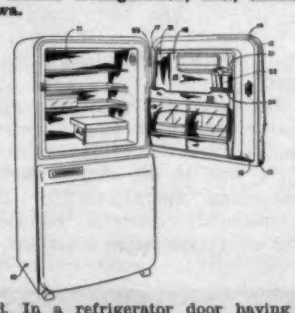
Week of October 29

2,811,019. OVERLOAD PROTECTION CIRCUITS FOR MOTORS OF REFRIGERANT COMPRESSORS. Arthur W. Courtney, Jr., Grottoes, Va., assignor to Westinghouse Electric Corp., Pittsburgh, Pa.



1. In combination with a hermetically sealed refrigerant compressor having a suction gas passage and an electric motor for driving said compressor in said passage, an electric supply circuit for said motor, an overload switch in said circuit, current responsive means for opening said switch, a resistor having a negative temperature coefficient in said passage, and means for flowing current proportional to the current flowing in said circuit through said resistor and said current responsive means.

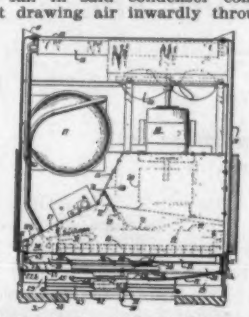
2,811,021. REFRIGERATOR DOOR LIQUID DISPENSER. Robert E. Moore, Cedar Rapids, Iowa, assignor to Amana Refrigeration, Inc., Amana, Iowa.



3. In a refrigerator door having a recess therein, a horizontal shelf at least partially within said recess, a vertical retaining wall along the exterior edge of said shelf, a horizontal bar in vertical spaced relation above the vertical retaining wall of said shelf, a receptacle for containing liquids removably positioned on said shelf, a notch on the exterior of said receptacle adjacent said horizontal bar, a spout having an opening therein on the top of said receptacle, said notch cooperating with said horizontal bar whereby said receptacle may be tilted outwardly for pouring.

2,811,022. ROOM AIR CONDITIONER. Harold F. Lathrop, Cedar Rapids, Iowa, assignor to Amana Refrigeration, Inc., Amana, Iowa.

2. In a room air conditioning apparatus having evaporator and condenser compartments, a first room air inlet chamber in said evaporator compartment, a second air outlet chamber in said evaporator compartment, an evaporator between said chambers and a fan between said evaporator and said second chamber for drawing air through said evaporator and transmitting it to said second chamber under a first positive pressure, a second fan in said condenser compartment drawing air inwardly through a

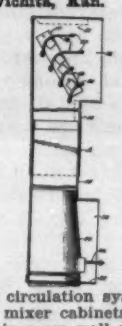


condenser into said condenser compartment under a second lower positive pressure, first damper means for supplying air from said condenser compartment to said inlet chamber. . . .

2,811,023. CONDENSER AIR CIRCULATION SYSTEM FOR AIR CONDITIONING UNITS. Harold F. Lathrop, Cedar Rapids, Iowa, assignor to Amana Refrigeration, Inc., Amana, Iowa.

1. In a unit type room air conditioner having a condenser chamber positioned for receiving and discharging air from outside of said room, a condenser extending horizontally substantially the full width of said unit, an exhaust passage above said condenser and extending substantially the length thereof, means for drawing air through said condenser and forcing it at higher velocity out through said exhaust passage, a condensate slinger on said means, and means on the under side of said passage for intercepting condensate from said slinger and directing it downwardly over the surface of said condenser.

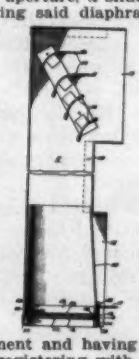
2,811,091. WALL CONCEALED AIR MIXING DEVICE. Jack W. Kice, Wichita, Kan., assignor to The Coleman Co., Inc., Wichita, Kan.



In an air circulation system, a plurality of air mixer cabinets adapted for installation in room wall spaces, means communicating said air mixer cabinets to a source of pressurized air, said source providing said cabinets with air at different velocities depending upon the remoteness of said cabinets therefrom, each of said air mixer cabinets comprising a plurality of longitudinally extending shell members telescopically engaging each other to provide a longitudinally adjustable chamber extending from end to the other of said cabinet. . . .

2,811,092. ASPIRATING APPARATUS AND VALVE THEREFOR. John M. Redmond, Jr., Wichita, Kan., assignor to The Coleman Co., Inc., Wichita, Kan.

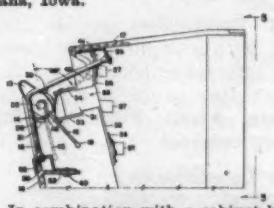
1. In aspirating apparatus, flow control means comprising a conduit, a fixed diaphragm member there-across having an aperture, a slide valve member engaging said diaphragm for sliding movement and having an aperture normally registering with the aperture of said diaphragm member, at least one of said members being provided with a resilient pad having an aperture of lesser diameter than the diameter of the apertures in said members to provide an inwardly-projecting pad edge adjacent the apertures of said members, the apertures of said members presenting opposed arcuate surfaces providing a generally circular opening changing to a generally elliptical opening when the valve is moved respectively from open toward closed position, and means for moving said valve.



Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Address orders to: Commissioner of Patents, Washington 25, D. C.

2,811,093. DEFLECTOR VANE. Harold F. Lathrop, Cedar Rapids, Iowa, assignor to Amana Refrigeration, Inc., Amana, Iowa.



7. In combination with a cabinet having a substantially oblong air outlet opening, a deflector vane controlling said opening, means adjacent the ends of said opening comprising upper and lower members defining between them passages converging toward said opening. . . .

(To Be Continued)

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POSITIONS WANTED

AIR CONDITIONING and refrigeration engineer, registered professional, seeks contact as consultant with parties manufacturing in or exporting to Western Germany. Expert translator and interpreter. Contracts, patents, technical articles, operating instructions, catalogs, specifications, standards, thermodynamic and psychrometric engineering calculations in US and European technical systems. Liaison USAEUR QM and German refrigeration supplier, preventive field maintenance. 40 years' theoretical, manufacturing and executive refrigeration experience. MANUEL A. LASSEN, 7818 Sunset Drive, Elmwood Park 35, Illinois.

AIR BALANCING and distribution engineer—Available to NYC Area contractors and consultants, seeking professional assistance in completing jobs thoroughly and satisfactorily. Fast, accurate readings with recommendations and full reports for ventilation index requirements. Have all instruments and measuring devices. BOX A5970, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

WANTED EXPERIENCED sales engineer, salary and expenses. CENTRAL ICE MACHINE COMPANY, 5014 South 24th Street, Omaha, Nebraska. Phone Market 4690.

OPPORTUNITY KNOCKS for good man road-blocked or stymied in present job. Steady growth and expansion has created additional requirements for a refrigeration engineer. If you qualify, here is a once-in-a-lifetime opportunity to become associated with a leading manufacturer in the commercial refrigeration industry. Arrange an interview now! Phone, write, or wire resume and salary requirements to Bill Walsh, FOSTER REFRIGERATION CORPORATION, Hudson, New York, Phone 8-1508.

SALES MANAGER—Rare opportunity with major corporation to organize a group selling to the air conditioning and refrigeration industries. Technical background in field sales engineering; must be capable of selecting, training, and developing an effective sales force in a highly competitive field. Age: in the thirties. Location: metropolitan New York. Salary: will match performance. All replies will be kept in strict confidence. BOX A5963, Air Conditioning & Refrigeration News.

CHIEF ENGINEER: Unusual opportunity with midwest manufacturer of valves and controls for refrigeration, air conditioning, gas and oil heating. Will be responsible for direction of complete engineering program. Proven administrative ability essential. Substantial experience in this field required. Record of creative accomplishment desirable. A top level assignment with progressive dynamic organization. Reply in confidence, giving education, experience, personal data, etc. BOX A5968, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

THERMO KING users RL30 units, equipped with Waukesha Engines. 121136B Stellite exhaust valves, set of 4 $10.50 postpaid. 121110A standard rod bearings, set of 8 $3.00 postpaid. 121012A crankshaft gear $1.75 each postpaid. H. L. BOGGESS & SONS, Liberty, Missouri.

SURPLUS LOT automatic defrost control. Fits practically all refrigerators 110V-AC. List price $10.50 our price $2.25 each. Lots 6-$1.85. Lots 10-$1.60. Miami quantity discount. Write for bulletin. NATION WIDE SUPPLIES, 3421 N.W. 48th Street, Miami, Florida.

LATEST STYLE 57 production 1 h.p. 230 V. single phase 50/60 cy. Freon-12 hermetic compressors Model AS1T16 air conditioning HBP. Complete with Klixon overload, relay, starting and running capacitor. $59.00 ea. Send for free circulars and bulletins on air conditioning and refrigeration values. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

BUSINESS OPPORTUNITIES

WANTED — ELECTRIC motor repair man interested in establishing own repair business in connection with other appliance repair shop. Located in new shopping district in growing resort and lake area. Write BOX 68, Warsaw, Indiana.

FOR SALE: Old, established commercial refrigeration, air conditioning sales and service on main street of town of 35,000 population Columbia Basin area. Long-time lease on building and dwelling. Will sell at inventory. Write BOX A5969, Air Conditioning & Refrigeration News.

PART INTEREST in highly successful air conditioning contractors firm available to young man with air conditioning background to gradually take over complete operations as present owner retires. Executive and sales ability essential. Established in Detroit area over 20 years. Minimum investment required $10,000.00. BOX A5971, Air Conditioning & Refrigeration News.

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For more information about products advertised on this page use Information Center, page 30.

Servicing Automobile Air Conditioners

(Vol. 2)

BY C. DALE MERICLE

BUICK (4)

Adding Oil

If examination indicates a shortage of oil in the compressor (see previous section under heading of "Compressor"), a sufficient amount of Frigidaire 525 viscosity oil must be added to bring the oil level up to a safe point.

Oil is added in the following manner on 1956 systems:

Attach gauge set to proper connections on compressor. Purge air from gauge lines, then close suction service valve on compressor.

Operate engine and compressor until 10 to 20 in. vacuum is obtained.

Connect a charging line and copper tube to the center connection on the gauge manifold. Insert the copper tube to the bottom of the oil bottle.

Slowly open the hand valve on the gauge manifold to permit high pressure vapor to purge air from the charging line and copper tube. Close hand valve on manifold and close (backseat) discharge service valve on compressor.

Open low side hand valve on manifold and open suction service valve. The vacuum will draw oil into the compressor. Oil should be added in 2-oz. increments until the oil charge has reached the safe level. Backseat suction service valve.

On 1957 systems, when examination reveals shortage of oil, Buick recommends removing the compressor from the car and draining the remaining oil into a clean container.

If oil is dirty, the compressor and condenser should be flushed with Refrigerant-12.

Then 9 oz. of new Frigidaire 525 viscosity oil should be poured into the oil check fitting, the fitting replaced, and the compressor re-installed on the car.

Operating Pressures

To permit checking a system to determine if it is functioning correctly, Buick offers the data in the accompanying table, which shows normal head and suction pressures and temperature at right-hand air outlet for various ambient temperatures and engine speeds.

In making this functional test the hood is closed, the car doors open, and the car is not exposed to any sun load. Heater control is off, and air conditioner controls set for maximum cooling.

Under conditions of high humidity and low ambients it is advisable to increase air circulation across the condenser by placing a large fan in front of the radiator grille. Buick cautions that extreme humidity conditions will make the functional tests erratic.

Engine speed should be that designated in table for corresponding ambient temperature.

Adjusting By-pass

It may be necessary at times to adjust the linkage to the hot gas by-pass valve, or the setting of the by-pass valve itself.

To adjust the linkage, first set the cooling temperature control lever on the dash to the maximum cooling position. Disconnect control wire loop from pin on lever of by-pass valve.

Push valve lever all the way toward the dash and release slowly. Valve lever will stop in maximum cooling position.

Adjust sheave on control wire so that loop matches position of pin on by-pass valve lever.

Clamp sheave in position with loop on pin.

To adjust valve itself, first disconnect valve control cable then remove valve control lever, counter-balance spring, and nylon cam follower.

With service gauges connected to compressor, operate engine at 1,600 r.p.m. with the air conditioning system turned on. The system should be allowed to operate long enough to stabilize pressures.

Adjusting screw of by-pass valve is then turned in or out to obtain a reading of 28 to 30 p.s.i.g. on the suction gauge.

After proper adjustment is made, the control lever, spring, and cam follower are replaced and the control cable re-connected.

Expansion Valve

Superheat setting of the thermostatic expansion valve used on 1957 Buick systems is non-adjustable.

Setting of the valve on 1956 systems can be adjusted. Buick, however, recommends that if the expansion valve does not function properly at the design superheat setting (five turns out counter-clockwise from the fully closed position), and it has been definitely established that the expansion valve is at fault, the valve should be replaced.

Control Adjustments

On 1956 Buick units, with the top heater and air conditioner air control lever positioned directly over the letter "x" in "Max" on the control panel, the following should result:

A. The center heater air distributor valve should be in full open position.

B. The heater air valve in the heater core inner housing should be fully open (with the defroster air valve closed).

C. The right dash air vent valve should be closed.

With the defroster control knob pushed all the way in, the defroster air valve should be completely closed.

On 1957 Buick units, with the heater and air conditioner air control lever in full "Off" (counter-clockwise) position, the following should result:

A. Both heater and defroster air valves should be closed.

B. Right fresh air vent should be closed.

C. Center heater distribution duct valve should be open.

With air control lever in full clockwise position:

A. Defroster valve should be closed and heater valve wide open.

B. Right fresh air vent valve should be open.

C. Center heater distribution duct valve should be closed.

D. Air conditioner clutch control switch should be closed, energizing clutch coil.

Most service complaints common to all automobile air conditioners will apply to the 1956-57 Buick systems. In addition, the valves in the air ducts may not be properly positioned (please refer to preceding section).

Operating Temperatures and Pressures For 1956-57 Buicks

Engine Speed (r.p.m.)	Ambient (°F.)	Head Pressure (p.s.i.g.)	Suction Pressure (p.s.i.g.)	Right Air Outlet Temp. (°F.)
575	60	70-105	28-30	45-49
740	70	105-140	28-30	46-50
915	80	140-170	28-30	47-51
1,100	90	175-205	28-30	48-52
1,300	100	215-240	28-30	49-53
1,550	110	250-270	28-30	50-54
1,800	120	290-305	28-30	51-55

No cooling could result from an inoperative blower, clutch, or compressor, loss of refrigerant charge, air valves improperly positioned, etc.

Check for broken drive belts, blown fuses, broken or loose wires, loss of refrigerant, etc.

Insufficient cooling could result from poor blower operation, clogged air filter, improper position of air valves, clogged condenser, shortage or overcharge of refrigerant, restricted lines, improper operation of by-pass valve or thermostatic expansion valves, etc.

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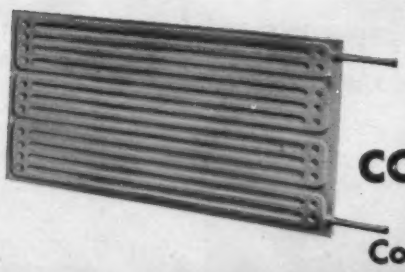

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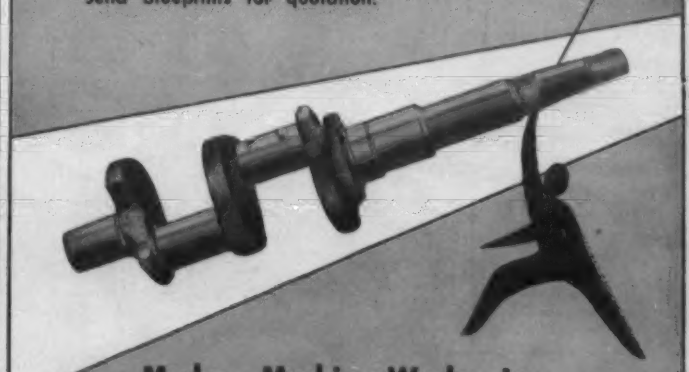

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Kelvinator Seeks 'Neglected Areas'--

(Concluded from Page 1, Col. 4)

vice president and general manager of the division, in his more extensive report on Kelvinator's progress and outlook. There has been some conjecture that Kelvinator might expand its activities in the air conditioning field.

The corporation made larger expenditures for improved new Kelvinator 1958 appliance models than in any other year.

'STRONG FLOW OF DEALER ORDERS'

Chapman said that initial dealer reaction to the new products, including the new "Style Mark" refrigerators and new room air conditioner line introduced at the January markets, has been most encouraging, with a strong flow of dealer orders since the middle of January. Chapman said that the "strength of dealer orders can best be indicated by the fact that our shipping department is currently on a two-shift, six-day week."

Stating that the Kelvinator U.S. operation produced a lower sales volume during the past fiscal year than it did during 1956, Chapman declared that this decline was part of the downward pattern of the entire appliance industry, and that generally, Kelvinator held its own in percentage of total industry sales.

In late 1956 and 1957, said Chapman, many manufacturers were overproducing appliances in anticipation of a big market that failed to develop and one manufacturer, faced with heavy inventories, ordered drastic price cuts that forced everyone to adopt similar measures.

'NO ONE BENEFITS'

The industry did profit in one important way from this unfortunate situation, Chapman said, in that it served to point out that no one was benefitting from such marketing conditions, and that new appraisals were in order. He said that 1958 merchandising programs and pricing policies indicate that manufacturers are generally moving to control production schedules and inventories in line with realistic sales forecasts.

A bright picture for operations of Kelvinator International in the world market was painted by Chapman. Total backlog of export orders on the books at Kelvinator's English plant will keep the plant at full production until July.

Licensee manufacturing operations of household appliances and commercial refrigeration units have continued to expand in overseas area. During 1957, licensing arrangements were made for the local manufacture of Kelvinator products in Italy, Finland, Greece, and Spain. Kelvinator now has 15 licensee manufacturing operations around the world.

Chapman also drew attention to the fact that six countries of Europe are joining together to form what is now known as a "Common Market," where workers and goods may eventually move as freely as in the U.S.

Further steps towards a more united Europe are now being negotiated to extend the Common Market into a Free Trade Area, embracing 12 more European nations, and creating a market of 260 million people. With manufacturing operations in Germany, France, and Italy, as well as England, Kelvinator International is well situated to take advantage of these developments, Chapman declared.

Rename American Gas Machine Scotsman-Queen Products, Inc.

ALBERT LEA, Minn.—King-Seeley Corp. has officially changed the name of its subsidiary here from American Gas Machine Co., making "Scotsman" products, to Scotsman—Queen Products, Inc., the company announced.

K-S emphasized that the Scotsman designation is of prime importance. AGM is no longer in existence.

Fedders Unit--

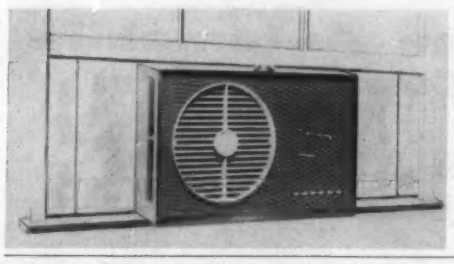
(Concluded from Page 1, Col. 3)

answer the specific need of consumers who will want an air conditioner for immediate use during a summer's hot spell.

Weight of the Minute Mount is 67 lbs. Its height and depth are 12½ in. and it is 20 in. wide. A ½-hp., 7½-amp. compressor, in a pancake design to save space, has 4,600 B.t.u. capacity.

"To install the Minute Mount with the new mounting device, a steel plate is first placed on the window sill and held firm by the Safety-Fast brackets," it was explained.

"The unit is then slid onto the plate, automatically in the proper position in the window line. Telescoping side panels and sealing gasket assure a weatherproof and safe installation. Two wing nuts provide accurate leveling. There is no drilling or marring of the window or its sill in any way.



MIDGET-SIZED portable room air conditioner of Fedders-Quigan Corp., called the "Minute Mount," weighs 67 lbs. and features a new mounting principle that permits immediate installation.

"While a small unit, the Minute Mount has the features of Fedders conventional size air conditioners, A built-in thermostat measures the proper amount of cooling. A single control knob on top of the cabinet allows for circulation of air. Also incorporated is the Fedders 360° directional louver, and twin filters. Provisions have been made so that the new Fedders can be used solely as a dehumidifier.

"A special fan and air flow arrangement assures quiet operation, while the cabinet, all metal except for the plastic circular louver, is made in one piece. Raymond Loewy styled the portable."

According to Giordano, the unit will be merchandised as a "carry-home" air conditioner. It is expected to fill the gap of sales lost on hot summer days because retailers could not provide immediate installation.

As with the rest of the 1958 Fedders line, there is no nationally set list price.

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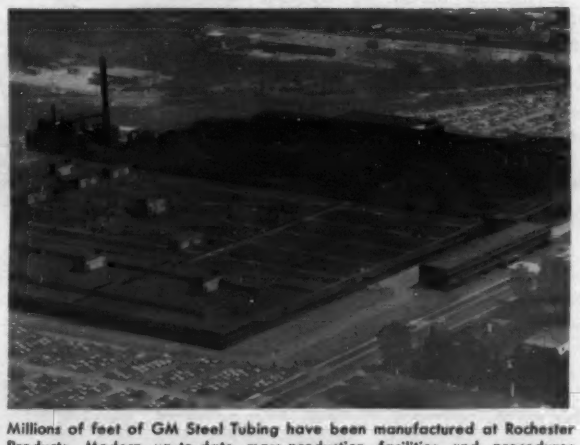

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